

# **small air forces observer**

vol. 19 no. 2 (74)  
July 1995

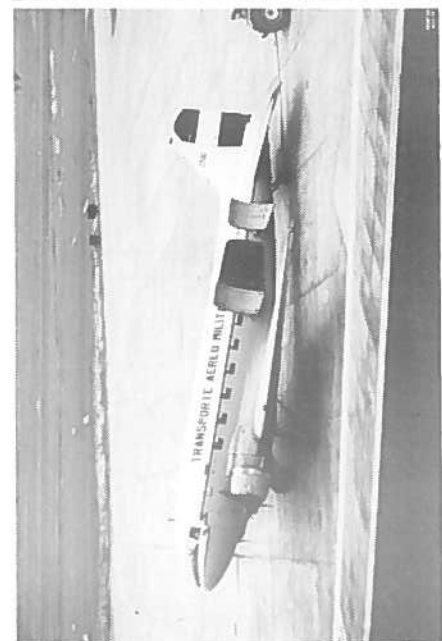
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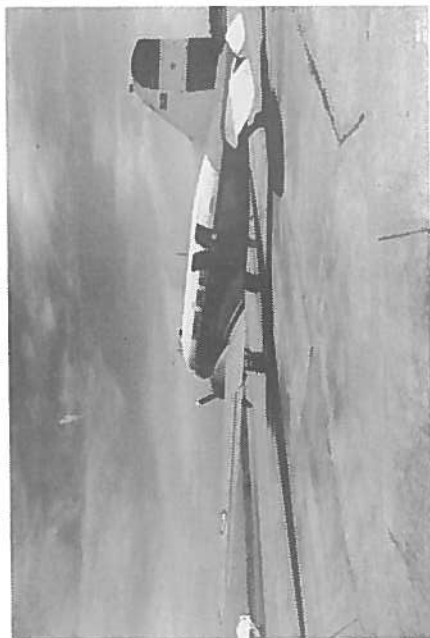
Grupo de Transporte Aero: Paraguayan Air Force  
Lithuanian Fokker D.VII  
Belgian Hanriot HD-1  
Air War over Georgia  
Ukrainian Air Force  
Cambodian MiG-21s  
Chinese He-111A-0

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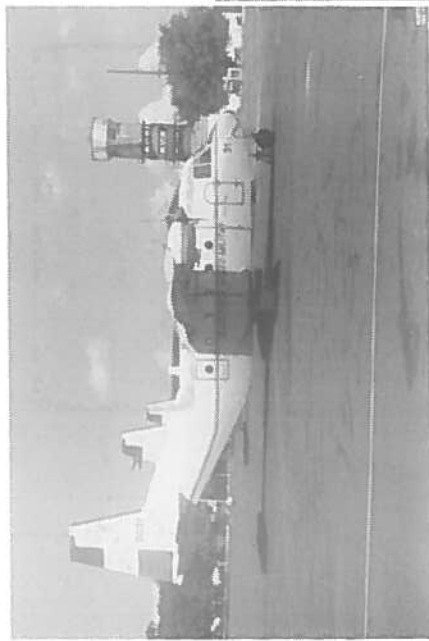
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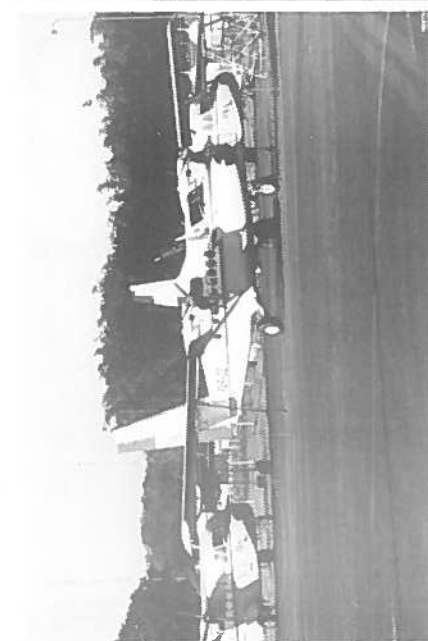
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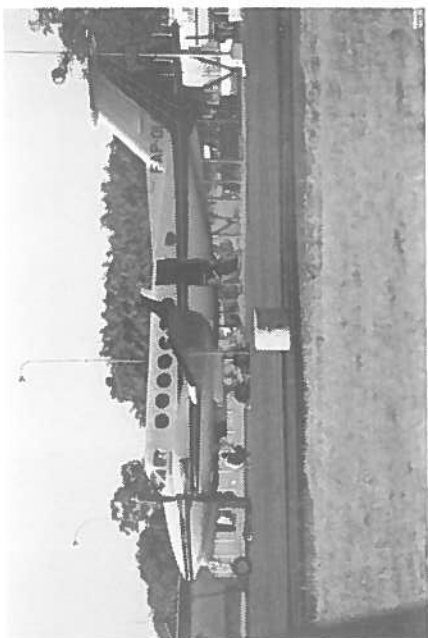
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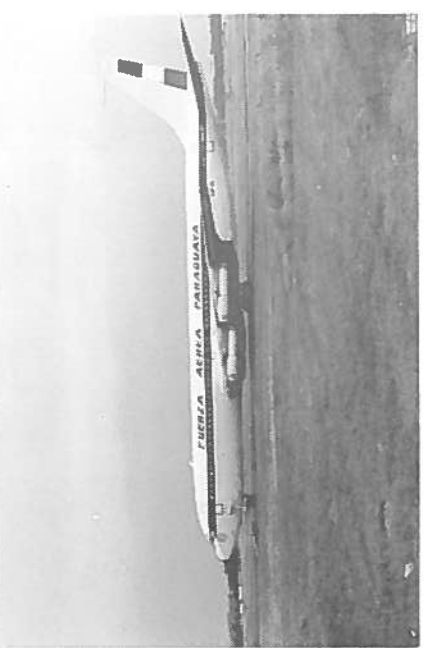
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# SMALL AIR FORCES OBSERVER

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**SAFO EDITORIAL POLICY:** The purpose of the SAFCH is to "promote interest in the history and modeling of the aircraft of the smaller countries". In support of this goal, the SAFCH encourages international cooperation in researching aviation history, both military and civil, from all periods of time, and for all the smaller countries. In return for this support, members are asked to submit occasional progress reports for publication in the SAFO. While the final results should appear in the most prestigious publication possible, it is requested that the SAFCH be mentioned (with address) in the article and that SAFO be afforded the opportunity of reprinting the material. Article published in SAFO can be reprinted provided permission of the author is obtained and the SAFO is identified in the reprint.

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**INFORMATION FOR AUTHORS:** Manuscripts may be submitted in any form; authors whose first language is not English may submit a rough translation of the text and the editorial office will put it into good English. Authors using a computer should send the manuscript on disc. Photo should be black and white prints although color prints can be used. If you want any photos returned, please

mark "Return" on the back. All art work must be ready for printing. The layout should be such that when a page is reduced (if necessary) the drawing should fit into the 7.5 inch by 10 inch working area of the final page. Art work that does not fit this requirement will have to be cut and pasted to fit; no problem, but things might not look exactly as you want them to look. All work for the SAFO is voluntary and no payment can be made for published material.

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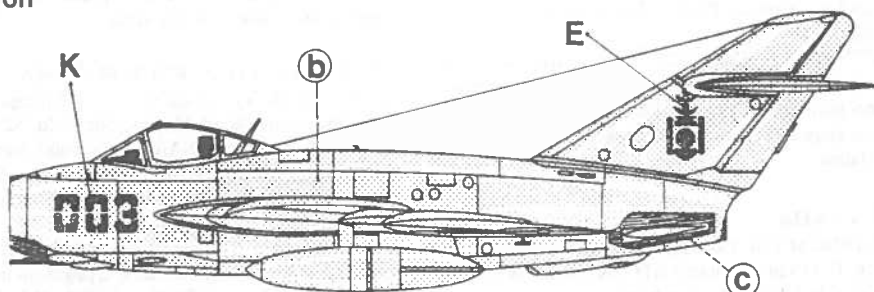
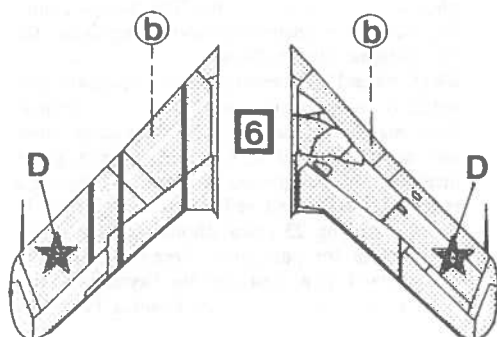
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**LOST MEMBERS:** Anyone knowing the whereabouts of the following 'lost' SAFCH members please inform the editorial office (last known address included): Eric Stoutenburg, Ft. Carson, CO; Curtis Marzolf, Bulverde, TX; Ira Campbell, Tamarac, FL; E. Tronn, Montreal, PQ Canada; Alain La Pierre, Maracay, Venezuela; Michael Parr, Prince George, B.C. Canada; Richard Harrison, Stroudsburg, PA; Ellis Estes, Alexandria, VA. Gary Lepinski, Minneapolis, MN; Claus Dam, Snaerildvej 41 F, DK-8300 Odder, Denmark; Doug Dildy, PSC 75 Box 675, APO AE 09719;

**COVER COMMENTS:** A Lithuanian Fokker D.VII in three-color camouflage photographed circa 1928. An article about the Lithuanian Fokker D.VII begins on page 41. (Photo via author)

Hi-Decal Line 72-030  
See review on  
page 59



MiG-17 Fresco A, Mongolian Air Force, Saynshand A.B.

## AUSTRALIA

**AUSTRALIAN PLASTIC MODELLERS ASSOCIATION** (APMA, PO Box 51, Strathfield, NSW 2135; 4 issues sea mail A\$27; air mail A\$30). 1/94 (28 pages) "Vintage Australian 1: Douglas DC-3 VH-EDD" 2 pages including 2 side-view drawings. "Swords into Ploughshares Part 2: Colours" 6 pages including 15 photos and 4 side-view drawings of Ceres agricultural a/c. "Vintage Australian 2: Wirraway VH-WRX" 1/2 page including one side-view drawing. "Supermarine Seafire F.17: Converting the Heller Spitfire 16" 9 pages including 7 photos and 6 side, top, & bottom views. "Seafire 17 in 1:48 Scale" 2 pages including sketches and a page of scale drawings. "Miraculous Kits: Part I 1:72 Scale and Below" an 8-page review of kits for modeling Australian Mirages.

## AUSTRIA

**OFH NACHRICHTEN** (Oesterrichische Flugzug Historiker, Pfenningeldgasse 18/2/14, A-1160, Wien. Write for free sample.) 1/95 (32 pages) "40 Jahre Luftstreitkräfte" 13 pages including 8 photos and a 5-page table listing individual a/c used by the Austrian AF from 1955 to 1995. "Der neue Landescheinwerfer" 2 pages including 3 photos and a side-view drawing of a Breda 25 in AAF markings.

## BELGIUM

**KIT** (IPMS Belgium, Te Couwelaarlei 103 bus 21, B-1200 Deurne/Antwerp; 4 issues US \$25 in cash, International Postal Money Order for 750 BF, or American Express IMO for US \$25; add US \$5 (or 120 BF) for airmail. Please specify French or Dutch edition. #95 3/94 (44 pages) "Les Spitfire Mk.14 de la Force Aerienne Belge: 3e Partie" 25 pages including one color & 23 b&w photos, 4 color side-view drawings, 4 pages of multiview drawings, tables on individual a/c, and review of available kits and decals. "Fancy Fencer" 11-page review of Italeri/Dragon Su-24 including 4 photos of a/c and 4 of the model, 6 side-view drawing, and a page of sketches of details. #96 4/94 (38 pages) "F-16 Ou en est-on?" 9 pages including one color & 12 b&w photos, 2 tables, and 3 drawings of fin markings on the current status of Belgian F-16. "Phantom Tigre" 6 pages including one color & 4 b&w photos and 4 pages of drawings of a tiger-painted RAF Phantom FGR.2. "Le Yakolev Yak-11" 12 pages including one color & 12 b&w photos of preserved a/c, and 3 four-view drawings (Austria, East Germany, & Poland).

## BRAZIL

**EM ESCALA** (IPMS Brazil, Rua Arquias Cordeiro, 316 S/502, CEP 20770, Meier, RJ. Subscription i/s \$10.00, but they prefer kits or accessories. Send to Antonio Pereira Linhares at the above address.) #77 3/95 (12 pages) "Beechcraft Modelo 17" 3 pages including one photo and a page of drawings (no markings). "Beaver: Força Aerea Paraguaya" one page including 3-view drawing of camouflage scheme.

## CANADA

**RANDOM THOUGHTS** (IPMS Canada, Box 626, Stn. B, Ottawa, Ontario K1P 5R7; 6 issues for US \$20.00 in US \$22.00 elsewhere.) 24/1 (28 pages) D-Day Special. This issue includes a large (20 cm by 25 cm) decal sheet for modeling

Canadian a/c, armor, and ships that participated in Operation Overlord. The articles describe the operations and markings of the equipment covered by the decal sheet. Aircraft articles are: "The First Mustang" 2 pages including scale drawings and 2 side-view drawings of Mustang I. "Canadian Aircraft on D-Day" 15 pages including 9 photos and multiview drawings of 3 Spitfire IXc and one Mustang I.

## CZECH REPUBLIC

**ZLINEK** (Jaromir Stepan, P.S. 8, 763 14 Zlin 12). Text in English. 2/4 (32 pages) "Lavochkin La-15 Fantail" 6 pages including 2 photos, color 4-view drawing, color drawing of cockpit interior, a page of sketches, and a page of scale drawings. "Panavia Tornado IDS" 10 pages including 2 b&w photos, 12 color photos of interior details, 8 color side-view drawings (RAF, German, Italian, & Saudi Arabian), and 3 pages of scale drawings. "Tornado in the Gulf" 2 pages with one photo and table of known serials of Gulf War Tornado (RAF, RSAAF, & Italian). "Tatra Trucks since 1898" 3 pages including 8 photos. "Tatra T815 - The latest heavy truck line" 3 pages including 5 color photos and 5 b&w photos. "Airfix: Diversity at the Best Price" 3 pages including 10 photos of vintage box art. "Krasvovnen Sapazhnyikov" one page with 2 color side-view drawings of Georgy Sapozhnyikov's Sopwith Snipe in Red colors.

## ENGLAND

**IPMS MAGAZINE** (Ernie Lec, 51 Ball Road, Hillsborough, Sheffield, South Yorkshire S6 4LZ, 6 issues for £20.00 (US subscription agent: Wise Owl Publications, 4314 West 238th St., Torrance, CA 90505; since exchange fluctuates write Joe for current rates). 1/95 (40 pages) "Modelling the BAe Hawk" 13 pages including 7 photos, 1/72-scale drawing, and 20 side-view drawings (11 RAF, Switzerland, Finland, Kuwait, Abu Dhabi, Saudi Arabia, South Korea, Zimbabwe, Kenya, & Indonesia). 2/95 (40 pages) "The Battle of Britain: Modelling the Aircraft Involved - Part 6: Junkers Ju-86B Stuka" 4 pages including 3 photos and 2 pages of sketches. "Glass-Nosed Invader" 4 pages on modifying the Monogram kit. "North-American F-100 Super-Sabre" 3 pages on building the AMT and Linberg kit (including drawings of Danish a/c). 3/95 (48 pages) "King George V Class Battleships: Part 1" 10 pages including 1 photo, 6 scale drawings, and 2 pages of drawings of camouflage schemes. "Better than Nothing: The Supermarine Seafire" 17 pages including 9 photos of models, 10 side-view drawings, one 4-view drawing (Seafire Mk47), and numerous sketches showing detail differences. "The Last of the Hunters" 3 pages including 3 photos and 4 side-view drawings.

**PLASTIC KIT CONSTRUCTOR** (PAMAG (Publications) Ltd., 3 Lowfield Court, Old Forge Business Park, Sark Road, Heeley, Sheffield, S2 4HG; 4 issues £ 18.00. In USA/Canada order from J.J. Daileda, 4314 West 238th St., Torrance, CA 90505; since exchange rates fluctuate write Joe for current rates). #42 (32 pages) "Firebrand V" one page of scale drawings. "Aircraft of the Aces" 2 pages on modeling Johnny Johnson's Spitfire EN398. "Modelling a Cornish Air Ambulance in 1/32nd Scale" 2 pages modeling a unique Bo-105. "Automobile Aviation?"

The First 80 Years" 2 pages including 6 photos. "Fat Albert goes Snooping" 2 pages including 7 photos of RAF C-130 modified for weather research. And, over 25 kit reviews.

## FINLAND

**MALLARI** (IPMS Finland, PL 798, 00101 Helsinki 10; 6 issues \$20.00, no check accepted due to the high redemption costs). 1/95 #105 (20 pages) "KV-1" 15 pages including 12 photos, 4 sketches of details, and 4 pages of drawings of KV-1 in Finnish markings. 2/95 #106 (20 pages) "Gneisenau" 6 pages including 4 photos and 1/700-scale drawing. "KV-1 in Finnish Army" 4 pages of 1/35-scale drawings.

**SUOMEN ILMALUHIHISTORIALLINEN LEHTI** (InScale 72, Makelankatu 5B10, 00550 Helsinki; Europe \$25, elsewhere \$30; payment by International Postal Order or in cash; no cheques of any kind accepted because of high redemption rates). Each issue includes a 2-page English summary. 2/95 (24 pages) "Ilmailuvoimien Alku: Kone F2" 6 pages including 9 photos and 4 side-view drawings of the first a/c in Finnish Aviation Corps: the SW 20/NAB 9 Albatros. "Lavansaaren Revohka 17/18.9.1943" 5 pages including 11 photos (Blenheim, SB-2, Ju-88, Do-17Z, DB-3, & Il-4) telling the story of a failed raid on Soviet airfield. "Bicester - Juva" 6 pages including 9 photos, map, and 3-view drawing telling the story of the delivery flight of Blenheims from England to Finland in February 1940. The Blenheims carried civil registration (OH-) and plain white discs where the national insignia would be placed. "Chipmunkien Pikaviisiiti" 3 pages including 10 photos of DHC-1 Chipmunks in Finland. "Aeroflot AFL-107" 2 pages including 5 photos of Il-14 crash at Helsinki airport in 1957.

## FRANCE

**Air Zone, Le Nouveau Mensuel de l'Air!** (Air Zone, BP n.49, 28210 Nogent-le-Roi, France. A one-year subscription for 9 regular issues and two special issues is 405FF. Payment preferably by check drawn in FRF on a French bank, by draft or postal giro.) Each issue contains book and kit reviews and a one-page summary in English. #4 (52 pages) "Central Enterprise" 8 pages including 13 photos of USAF & Canadian a/c in NATO exercise. "Boucaniers du Desert" 4 pages including 10 photos of Porto Rican ANG F-16s exercising with the Chilean AF. "En Campagne a 'Zara': 10 pages including 17 photos of French Mirages on gunnery training in Corsica. "Etoiles Filantes" 12 pages including 22 photos of Russian a/c leaving Germany. #5 Special (60 pages) The entire issue is devoted to the Mirage in the French AF including 50 color photos, 40 color side-view drawings, and color photos of all squadron patches. This is an outstanding issue; I hope they will do something similar for international Mirage 2000s. #6 (52 pages) "El Sombrero Naval" 9 pages including 22 color photos of current a/c of the Mexican Navy, many with a new dark-blue and yellow color scheme. "Sous l'oeil de Chinderbannes" 6 pages including 12 color photos of NATO a/c during a recent exercise. "Les Gardiens du Septentrion" 15 pages including 23 color photos of Danish a/c responsible for patrolling Greenland and the Faroe Islands (Catalina, Dakota, Skymaster, Hercules, & Gulfstream). "Etoiles Filantes: Part 5" 10

pages including 15 color photos of Russian a/c leaving Germany. [Editor's note: one of the many things I like about Air Zone is the inclusion in every article of a map locating country under discussion and color drawings of the national insignia and flag. How many of you know the flags of Greenland and the Faroe Islands?]

**AVIONS: Toute l'Aeronautique et son Histoire** (39 rue A. Briand, 62200 Boulogne Sur Mer, France. 420F for 12 issues).

#25 Avril 95 (52 pages) "Le Mirage F1: 3eme partie" 4 pages including 12 color photos of armament on French a/c. "Le Breda 27: 1ere partie" 7 pages including 9 photos, 2 pages of 1/72-scale drawings, & color cover painting of Chinese a/c. "Les Hydravions Paraguayens 1919-1947" 5 pages including 17 photos. "Les Farman F.220 a F.224: 2eme partie" 6 pages including 11 photos and a 2-page cutaway drawing. "Le Tupolev ANT-25: 2eme partie" 7 pages including 6 photos and 4 pages of 1/72-scale drawings. "Le Centre d'Aviation Maritime Americain de l'Ile Tudy" 3 pages including 6 photos. "Gourdou-Leseurre: 3eme partie" 5 pages including 15 photos (9 Finnish, one Czech, & 4 Estonian) and 2 color side-view drawings (one Estonian). "Le Heinkel He 51: Maquette Karo-As 1/48" 3 pages including 8 color photos of model. #26 Mai 95 (52 pages) "Le Mirage F1: 4eme partie" 7 pages including 9 color photos and a 2-page 1/72-scale drawing. "Le Centre d'Aviation Maritime Americain de l'Ile Tudy" 5 pages including 5 photos. "Le Nieuport 32 RH" 4 pages including 8 photos and a color cover painting. "Les Farman F.220 a F.224: 4eme partie" 5 pages including 14 photos, 2 color side-view drawings, plus a 4-page foldout 1/72-scale drawings. "Les Premiers Chasseurs Gourdou-Leseurre" 2 pages of 1/72-scale drawings and a 2-page cutaway drawing. "Le Breda 27 en Chine" 3 pages including 7 photos and a color side-view drawing. "Les Avions de l'Armee de l'Air Internes en Espagne en Juin 1940" 3 pages including 5 photos (Potez 63.11 & Martin 167). "Les Dewoitine D.21 de l'Aviation Navale Argentine" 5 pages including 12 photos and one color side-view drawing. "Le Dornier 335 V10: Maquette Dragon au 1/72eme" 3 pages including 8 color photos of model.

#27 Juin 95 (52 pages) "Le Mirage F1: les Contre-Mesures" 8 pages including 18 color photos and a 2-page 1/72-scale drawing. "Les Appareils de Reconnaissance Embarques de la Marine Sovietique" 7 pages including 18 photos (KR-1 & KOR-1) and 2 color side-view drawings & a 2-page 1/72-scale drawing of the KOR-1. "L'Aviation 'Francaise' de Sultan: Les Unites Aeriennes Ottomanes 1912-1915" 4 pages including 14 photos (REP & Deperdussin). "Le Nieuport 32RH" 2 pages with one photos, one color side-view drawing, and a 1/72-scale drawing. "Les Farman F.220 a F.224: 5eme partie" 9 pages including 14 photos, 2 color side-view drawings, and a 4-page 1/72-scale drawing. "Le Breda 27M" 3 pages including 5 photos and a 2-page cutaway drawing. "Les Premiers Chasseurs Gourdou-Leseurre" one page with 2 photos (Yugoslavia). "Nom de Code: Morse - Le Supermarine Walrus" 6 pages including 19 photos. "Le Terrain d'Aviation Conde-Vraux" 4 pages including 11 photos. "Hannover CL.III Maguette Koster su 1/48eme" 3 pages including 7 color photos of model.

## GERMANY

**MITTEILUNGEN** (IPMS Germany, Berengruenstrass 5-7, D-1000 Berlin 38; 12 issues DM 60.00 Europe, DM 65.00 USA, DM 70.00 Japan,

DM 75.00 Australia).

2-95 (40 pages) Nothing of small-air-force interest.

## GREECE

NEA (IPMS-Greece, PO Box 79167, 175 05 Amfithea, Athens) 4 issues \$25.00 for first year, \$20.00 for next year. Includes English summary. 4/94 (32 pages) "Greek F-86(M)" 7 pages including 3 color photos, 7 b&w photos, and 6 color side-view drawings. "The Astra Hydroplane" 4 pages including 3 photos and 1/72-scale 3-view drawing. "BT-5 Tank in Spanish Civil War" 3 pages including 2 photos and sketches of modifications required of kit. "Moments of the Past" 3 pages including 2 color photos and 5 b&w photos of Catalina owned by a Greek TV channel. Color photo of Greek F-16. 1/95 (32 pages) "Leopard IV in the Hellenic Army" 9 pages including 7 color & 7 b&w photos and 1/35-scale drawing. "Spanish Civil War Air Forces: Part 1" 7 pages including 5 photos [Fury, Fokker F.VIIB3m, Dornier Wal (2), Breguet 19], and two color profiles of Vildebeests. "Monimo Aviation Museum" 5 pages including 8 color and 6 b&w photos.

## ITALY

**IL NOTIZIARIO** (IPMS Italy, CP 182, 41100 Modena Ferrovia; one year 50,000 Italian Lira in Europe or US \$50.00 overseas). 1/95 (32 pages) "Vought F6U Pirate" 4 pages including 5 photos. "Tornado: Precisioni sull'Operazione Locusta" 5 pages including 14 photos. "Aeromacchi MB.326 nell'Aviacion Naval Argentina" 6 pages including 3 photos and 6 side-view drawings. "Elenco Generale dei Kits Riguardanti gli Aerei della R.A." a 3-page table listing all kits of Italian a/c used up to 1945, starting with the Ansaldo A.1 and ending with the Savoia Marchetti SM.92.

**JP-4** (JP-4, CP 1550, 50100 Firenze; L 27.000 Europe, L 30.000 elsewhere).

2/95 (116 pages) Color photos: Polish Mi-14PL '1008', Kuwait F/A-18, Slovak Yak-40 'OM-BYE' & 'OK-BYL', and Czech Canadair CL501/3A 'OK-BYA'. "Elicotteri per il San Marco" 6 pages including 10 color photos of Italian helicopters. "La Fuerza Aerea Uruguaya" 6 pages including 9 color photos (T-34, A-37B, C.212/200, AT/T-33, Pucara, PC-7U, Ab-212, & C-130B). 3/95 (116 pages) Color photos: North Korean Il-62M 'P-618'; Russian Tu-154 'RA-85713'; Macedonian B.737; Lithuanian Yak-42; Croatian PA-31P Mojave '9A-DSD'; and Polish MiG-29UB '64'. "Tanti Nemici Tanto Onore" 6 pages including 10 photos of USN Adversary a/c.

4/95 (116 pages) Color photos: Nambian Beech 1900C 'V5-MMN' and Russian Il-14 '01146'; "Le Pattuglie di Kubinka" 6 pages including 9 photos of a/c of Russian demonstration teams. "Non Solo Cubana" 5 pages including 11 photos of civil operations other than Cubana.

5/95 (116 pages) Color photos: Il-18D of Polnippon Cargo; Iceland F.27/200, SA.365N, & AS.350B; Swiss F-5E 'J-3089'; Ghana MB.326K 'G717'; and Philippine S.211. "Le Armi della Croazia" 5 pages including 10 color photos (MiG-21, Mi-8, Mi-24, & An-2) and mention of Croatian use of L-39 and rumors of the acquisition of MiG-29s. "Le Alo di Malta" 6 pages including 9 photos of camouflaged Bird Dogs and helicopters in new green/white scheme. "Pippo, il Mulo, l'Aquila (e lo struzzo)" 8 pages with 12 photos of 350th Fighter Group USAAF operating P-39s and P-47s over Italy.

## NETHERLANDS

**MODELBOUW IN PLASTIC** (IPMS-Nederland, Fonteinkruid 5, 3137 WL Vlaardingen.)

2/94 (28 pages) "Aerospatiale Dauphin SA 365N in dienst van Schreiner" 9 pages including 18 photos, 6 side-view drawings, and sketches. "Dinky-Toy Bommenwerper" 3 pages including 2 photos and 4 side-view drawings of South Vietnamese AT-37. "Nogmaals: De Catalina van de MLD" one page including a side-view drawing of Dutch PB2-B2 Catalina VI.

3/94 (28 pages) "De USAF F-4 Phantom in Vietnam" 9 pages including 10 photos, 3 side-view drawings, and many sketches. "Wiking-Modellen" 3 pages including 6 photos of WWII identification models.

4/94 (28 pages) "De Dash Four Aerobatic Teams 1956-1958" 9 pages including 9 photos and 4 two-view drawings of Dutch F-84F Thunderstreaks. "Haze Paint en Synthetic Haze Paint" 4 pages including 5 photos of USAAF Lockheed F5B.

1/95 (28 pages) "Vacuform Halifax" 9 pages including 10 photos, a 3-view drawing, and many sketches. "Museumstukken van Kunstthars 1: Fokker T-V" 5 pages including one photo and 3 pages of scale drawings & sketches. "Een Indische Curtiss Hawk" 2 pages on modifying the Hobbycraft Curtiss Hawk.

## PARAGUAY

**MODELO TERAPIA** (Antonio Luis Sapienza, PO Box 2721, Asuncion, Paraguay. US regular issues \$3.00, specials issues \$5.00 - both sent via air mail).

2/9 (8 pages) "Maquetas Paraguayas: Fiat CR-20bis" 3 pages including 3-view drawing. "Maqueta del Mes: Fairchild PT-13 Fuerza Aerea Ecuatoriana" 2 pages including 2-view drawing. "Maqueta del Mes: Douglas DC-3/C-47 Fuerza Aerea Mexicana" 2 pages including 5 side-view drawings.

2/10 May '95 (12 pages) Special issue "Los North American Texan de la Fuerza Aerea Paraguaya" 10 pages including five 3-view drawings (side, top, & bottom) and 2 side-view drawings.

## POLAND

**FANATYK PLASTIKU** (Marek Bronkowski, Slowackiego 4, Sandomierz.)

#15 (32 pages) "Nocne Havoc'li" 7 pages including 26 side-view drawings and drawings of radar antennae for Havoc night fighters. "Iskra Solo" 3 pages with 4 photos and 1/72-scale 3-view drawing showing complete camouflage scheme and giving FS596 equivalents of colors for single-seat TS-11. "Iryda" 5 pages with one color and 18 b&w photos. "Malwiny 1982" a 2-page list of kits for a/c of the Falklands War.

## USA

**Chine Lines** (IPMS Seaplane SIG, c/o Bill Devins, 107 Troy Hills Rd., Whippany, NJ 07981. \$8.00 for 4 issues).

#9 Winter '95 (18 pages) "1/200 Scale - Bonanza for Seaplane Modelers" 5 pages including table of models available in 1/200 scale. "Air Craft 1/144 Vacuform Sikorsky S-40" 3-page kit review. "Supermarine S.6 and S.6B" 3 pages including 'Sketch Page'. "Reluctant Submarine Scouts" 3-page review of Esoteric's kits of the Macchi M.16 and Martin MS-1.

**WWI AERO** (15 Crescent Rd., Poughkeepsie, NY 12601; 4 issues \$25.00 USA or \$30 overseas).

#148 (146 pages) "In Search for an Airship Engine: Part II" 10 pages including photos and drawings of



Italian airships and airship engines. "Curtiss Pushers Part IV: Send in the Clones" 19 pages including 10 photos, two 3-view drawings, and many sketches of copies of Curtiss pushers built up to 1910. "Sikorskys" 10 pages with 35 photos of all Sikorsky types built in Russia. "Aerial Reconnaissance and the BE.2c" 6 pages. "Synchronizers: Part V" 12 pages. "German Aircraft Structures Development during the War" 6 pages. "Cockpits/Instruments" 7 pages. "Drawings" 17 pages including Albatros B.II & Ago C.II. "Engines" Wolsley Adder" 4 pages

SKYWAYS (15 Crescent Rd., Poughkeepsie, NY 12601; 4 issues \$25.00 USA or \$30.00 overseas.). #34 (84 pages) "The Lindberghs Atlantic Flight" 11 pages including 13 photos of their Lockheed Sirius 'Tingmissartog'. "Curtiss-Wright CW-21" 9 pages including 8 photos and reprints from Aero Digest of description of the CW-21 and history of the Curtiss-Wright Corporation. "Japan's French Connection" 5 pages including 9 photos of Japanese Spads, Nieuports, and Sopwith 1 1/2 Strutters. "B/J Navy Fighters" 5 pages including 5 photos (XFJ-2, XF2J-1, & XF3J-1). "Wisnant Longitudinal Airplane" one page including 2 photos. "Gull Wing Sampler" 8 pages with 19

photos. "Mexican in the Gloriosa" 8 pages including 12 photos (Breguet 19, Polikarpov R-Z, and I-16) on Mexicans in the Spanish Civil War. "Burnelli's Bombers" 4 pages including 3 lifting-fuselage designs. "More on Steam Power" 2 pages. "Fokker Structural" 4 pages with 10 photos showing differences in fuselage shapes for Fokker F.VII, C-2, & F-10. "First Kill" 2-page excerpt from the upcoming book 'First Encounter' by Barbara Gyns. "Grumman's" 5 pages with 14 factor photos of XJ3F-1 & XF4F-2. "Cockpits: Boeing PB-1" 3 pages including 5 photos.

## -wants&disposals-wants&disposals-wants&disposals-wants&disposals-wants&disposals-wants&disposals-wants&disposals-

"I am looking for some books. In Poland, it is still hard to find Western publications. Caldwell, 'Top Gun of the Luftwaffe - Jagdgeschwader 26'; Musciano, 'Corsair Aces'; and O'Connor, 'Aces of the Austro-Hungarian Empire'. Also, I am looking for any issue of the bi-monthly American magazine 'Aviation' (earlier 'Heritage Aviation')." Przemek Skulski (SAFCH #739), ul. Trzebowianska, 54-153 Wroclaw, Poland. [Editor's note: See books reviews in this issue of SAFO to see what Przemek might be able to trade for the books he wants.]

"My proposal for a book on the history of the world's military aircraft insignia is now definitely ON. This is a genuine effort by a large international publisher and, short of a major financial disaster, sell-out, or take-over, I'm sure they will go ahead with it. The current idea is a brief history of each air force (a few lines only), reasons for changes of markings, and meaning of colours, followed by full-colour wing, fuselage, and fin markings on a line drawing of a representative aircraft.

"I would be glad to correspond with anyone who could help answer some of the hundreds of questions that will come up. I am very excited about this and will, of course, acknowledge SAFCH's help as well as that of individual members."

John Cochrane (SAFCH #905), 6 Bonnington Avenue, Crosby, Liverpool, L23 7YJ, England.

"I am looking for information on the markings of the personal aircraft (if any) of Stanislaw Skalski with the Polish Fighter Team (Skalski's Circus) in North Africa. I know their aircraft were Spitfire IXc in desert camouflage and the codes (ZX-0 to -9) were red outlined in white. I know of only two aircraft: ZX-5, EN247, flown by Karol Pniak and ZX-6, EN315, flown by Mateusz Izyski. Any help would be appreciated."

John Hagan, 8476 E. Saratoga At., Anaheim, CA 92808-1223, USA.

"I am looking for information on the Japanese-allyed air forces of the Greater East Asia Co-Prosperity Sphere: Burma, China (Nanking), France (in Indo-China), Indonesia, Manchukuo, and Thailand - and information on plans for the creation of air units in India (Indian National Army), Malaya, Mengchiang (Inner Mongolia), or the Philippines. For instance, it is known that the Japanese intended to create a Burmese air force and trained Burmese officers towards that end, but I have found no evidence that any aircraft were turned over to the Republic of Burman, or that a

national insignia was selected.

"I have already consulted back issues of SAFO, and would appreciate hearing from anyone with additional sources of information, but please contact me before investing in copying your material. Will gladly exchange information (from sources other than SAFO) that I have been fortunate enough to receive from other researchers."

John Berger (SAFCH #1389), PO Box 23109, Honolulu, HI 96823, USA.

"I am seeking 35-mm color original slides of military aircraft from ex Warsaw Pact nations, India, Singapore, Greece, and South American and Middle Eastern nations. Will exchange for quality US slides or modeling supplies, or purchase directly."

Dick Vartabedian (SAFCH #626), 5470 Chanto Drive, Clarkston, MI 48346, USA.

"I am interested in corresponding with anyone with information on Dutch and Belgian fighter pilots in WWII. This could lead to a good story for SAFO, and I am willing to cooperate on any such venture." Rick Peck (SAFCH #940), 11700 Nambe Ave. N.E., Albuquerque, NM 87123, USA.

"I am looking for the following books: 'With a Bristol Fighter Squadron', Noble, 1977; 'Sailor in the Air', Davies, 1967; '3 Squadron at War', Watson & Jones, 1959; 'Open Cockpit', Lee, 1969; 'Frank Luke, Balloon Buster', Coombs, 1967; 'Pursue and Destroy', Carson, 1978; 'Aim of a Lifetime', Jakovlev, 1972; 'Strike from the Sea', Jackson, 1970; 'Aces, Pilots & Aircraft of the 9th, 12th, & 15th USAAF', Weatherill, 1978; and 'Aircams/Airwars: #9 'Luftwaffe Night Fighter Units', #11 'Luftwaffe Fighter Units in Russia', #16 'USN Carrier Air Groups', #17 'German Fighter Units 1917-1918', & #24 'Luftwaffe Fighter UNits in Europe'."

Ronald Nass (SAFCH #970), PO Box 2341, Ellicott City, MD 21041-2341, USA.

"I am looking for the following books: Fighters over Tunisia, Shores; Hurricane over the Jungle, Kelly; Markings and Camouflage Systems of Luftwaffe Aircraft in WWII, Ries (need volumes 4 & 4, but will but the set if necessary); Suomen Ilmavoimien Historia #4 Morane 406.

"Years ago, Modell Magazin came out with a series of Photo-Archiv that ran to about #11. I have #4 and I would be interested in any and/or all. If you have a complete set and wish to sell it as such, I'll take it.

"In the late sixties and seventies, there was a series of books published by Doubleday that were called, I believe, Combat Planes of World War Two. These were thin, hard cover, landscape format. I'm looking for #11, French Fighters.

"Last, but certainly not least, I would be interested in any copy, used or otherwise, of Avions Magazine numbers 1-2, 4-7, 9, and 13-14. I recently spent three weeks in England and managed to get to the Aviation Book Shop on Holloway Road in London. It was there that I discovered Avions for the first time. Needless to say, I bought every copy I could get my hands upon."

Geoffrey Schroeder (SAFCH #591), 4555 Fulton Ave., #109, Sherman Oaks, CA 91423, USA.

"I am writing on behalf of the Old Rhinebeck Aerodrome, a flying museum in upstate New York. We are currently rebuilding our Nieuport XI Bebe and we need some help with the markings. The Nieuport I need to know about belonged to Victor Chapman, one of the original American members of the Lafayette Escadrille, and the first American causality of World War 1. So far, we know that his plane was a creme color solid and there were no tricolor roundels on the top of the upper plane.

"What we are interested in is his serial number and his personal markings, but after extensive research with other museums and reading pages from "Victor Chapman's Letters From France", we were not able to locate a suitable photograph of his aeroplane.

"If you have any photographs of his aircraft, three-view drawings, or just a description, we would like to have a copy. You can mail them to me at the address below, or you can call me at (914) 8764319. Jonathan Fallon, Volunteer, Old Rhinebeck Aerodrome, 18 Kalina Dr., Rhinebeck, NY 12572, USA.

"I would like to buy or exchange photos/slides of the the following Latin American aircraft: F-51 Mustang/Cavalier (any Latin American country), F4U-1D/4/5 Corsair (El Salvador, Honduras); A-26B/C Invader (Colombia, El Salvador, Honduras, Cuba FAEC/FAR); FB.11 Sea Fury (Cuba FAEC/FAR); and F-80C Shooting Star (Ecuador, Peru, Chile camouflaged). For exchange, I have good pictures of Argentine Super Etendard, Aeromacchis, T-34C 'Sharkmouth' Mentor, etc." Carlos Alberto Eras (SAFCH #1346), Gaboto 1889 Planta Baja Dpto."A", CP 2000 - Rosario, Santa Fe - Republica Argentina.

# The Fokker D.VII in Lithuanian Service

Gytis Ramoška

The first Fokker D.VII for Lithuania were purchased during the autumn of 1919. The exact date can not be found in the military archives because these purchases from Germany were not official and not legal since, after WWI, Germany was not allowed to sell military aircraft.

From later documents, found at the Military Aviation Depot, it has been determined that two aircraft were obtained. Both were built by Albatros (Schneidemuel) with Mercedes 160-hp engines: Fok D.VII (OAW) 8397/18 and Fok D.VII (OAW) 8497/18. Other documents mention an unspecified number with the more powerful BMW 185-hp engines, Fok D.VII 6508/18 also with a BMW 185-hp engine, Fok D.VII 9397/18 with a 160-hp Mercedes, and the fuselage of Fok D.VII 508/18. All these aircraft were in need of major repair. Also, in the depots on Lithuanian territory, there were wings, tail surfaces, radiators, and other parts, most of which were not in very good condition.

In a photo taken in October 1919 at Kaunas airfield, there is visible one Fokker D.VII still with German insignia. If old pilots are not mistaken in their memories, this Fok D.VII was constructed from spare parts by the top cadet of Aviation School, V. Rauba. For a long time, it was not flown.

There was no urgency to assemble the other Fokkers. Lithuania's enemies during War for Independence were not very active in the air and they attempted no air raids against aviation bases or other important targets. Therefore, there was no need to use the fighters which had been purchased. On the front lines, the Lithuanians used two-seat reconnaissance planes such as the LVG C.VI, Albatros C.III, Halberstadt C.V, and Albatros J.II. They used machine guns and bombs to attack the enemy in his trenches, on the roads and railways, and in the stations. For such missions, the Fokker D.VII was not necessary.

The newly organized Military Aviation Workshop began to assemble the Fokkers only late in 1920. Because these aircraft were assembled from parts from different aircraft, and with many parts having to be manufactured, they were given new Lithuanian serial numbers (which were also their construction numbers).

Fokker D.VII Nr.2 made its first flight on 20.09.1920. (Aircraft Nr.1 was an Albatros D.III which, because of minor damage, did not fly until 23.01.1921.) The second D.VII, Nr.3, made its first flight on 15.01.1921 and the third, Nr.5, on 7.10.1921. (Aircraft Nr.4. was a LVG C.VI that first flew on 12.03.1921.) The fourth D.VII, Nr.6, made its first flight on 21.09.1921.

The first extended flight of a Lithuanian Fokker was made on 2.10.1920 when J. Dobkevicius flew from Kaunas to Vilnius, returning to Kaunas the next day. It was about at this time that the Poles began their offensive on the Vilnius front in an effort to occupy all of Lithuania.

The first combat mission was flown by Fokker D.VII Nr.2, on 6.10.1920, when Kaunas airfield was attacked by two Polish aircraft. Lt. Jurgis Dobkevicius rose in defence, but the Poles headed for home before he could climb to meet them: One of the Poles, in his haste to escape, dropped all his bombs without removing the safety fuses.

On 25.05.1922, the first group of Lithuanian pilots began to

practice aerobatics on D.VII Nr.6. They learned to make loops, helixes, Immelmans, vertical turns, Ranversmans, spins, barrel rolls, falling leaves, etc.

The excellent flight properties of the Fokker D.VII insured its long service in Lithuanian military aviation. Even when faster fighters were available, the Fokkers continued to be used to train pilots in aerobatics, even up to 1940.

## Production of Fokker D.VII in Lithuania

After the War for Independence, the budget for the Ministry of Defence was greatly reduced. So much so that, until 1928, only two batches of aircraft were purchased: ten SVA-10 in 1923 and eight Czech S20L in 1925.

By this time, the large fleet of ex-German aircraft in Lithuanian service had been greatly reduced by eager, young pilots. Since there were a large number of ex-German 200-hp Benz and 160-hp Mercedes engines on hand, the Military Aviation Workshop, starting in 1923, began to build a few new Halberstadt C.V, Albatros B.II, and Albatros C.III yearly. No licenses were procured, since our engineers were able to copy existing aircraft and, in any case, Germany was in no position to demand payment for military aircraft and Lithuania had no plans to sell these aircraft on the foreign market.

From 1921 to 1929, the technical aspects of the Military Aviation Workshop were under the direction of Chief Engineer Adolfas Blumentalis who had graduated from the Darmstadt Technical School in 1913. He was the only academically-trained engineering in Lithuania at that time. [J. Dobkevicius studied in Paris in 1923-25 (and died in 1926) and A. Gustaitis studied in Paris in 1925-28.]

By 1927, it was obvious that service life of the engines in the SVA-10 was coming to an end and the engines would need to be replaced. Six 240-hp Siddeley Puma were bought at a bargain price. These late-WWI English engines were a little old, but were 40 hp more powerful than SPA-6A used in the Italian-built SVA-10.

After re-engining five SVA-10 with Pumas, the sixth engine was mounted in a Fokker D.VII. Since there was little difference in weight between the 160-hp Mercedes (270 kg) or the 185-hp BMW-IIIa (288 kg) and 240-hp Puma (288 kg), the only change to the airframe was a 0.2-m increase in the height of the cowling.

This conversion was begun early in 1928. By July, the Fokker D.VII, given c/n Nr.17, was finished. On 20 July, a test board was appointed, and, on 27 July, the aircraft was tested by two members of the board, Sr. Lt. J. Garolis and chairman of the board, Capt. A. Stašaitis. The aircraft was accepted for service. The Fokker of Lithuanian construction was noticeable different from German-built Lithuanian Fokkers. The front of the fuselage was considerable higher, almost filling the space under the top wing; the propeller had large spinner; and the water radiator was mounted, not in front of engine, but under the fuselage (the standard radiator had too small a capacity for the Puma engine).

Powered by the Puma, this Fokker D.VII achieved 200 km/hr speed at sea level compared to 180 km/hr with the 160-hp Mercedes and 190 km/hr at 3 km altitude with the BMW-IIIa. Therefore, Nr.27 was the fastest Fokker D.VII in Lithuanian service. However, the efficiency of the rudder and elevator were

greatly decreased by the larger aerodynamic shadow from the fuselage and radiator. In addition, the forward visibility during landing was greatly reduced. Because Nr.27 was slow compared to fighters then in Lithuanian service, it was considered for use as trainer, but the defects were so great that Nr.27 was not used very much.

With the arrival of new aircraft (Italian Fiat CR.20 and A.120) in 1928-29, the Training Squadron (Mokomoji eskadrile) began training 20 pilots and observers. These new pilots needed an aircraft on which to practice aerobatics. Because the Fokker D.VII was the best aircraft for this purpose, it was decided to build two more D.VII, but without an exotic engine. The old, reliable 160-hp Mercedes was considered sufficient for such purposes.

These aircraft were finished early in 1930, but test flights had to wait until spring after the airfield had time to dry out. On 17.04.1930, a test board was appointed to test Fokker D.VII Nr.37 (Chairman V. Šenbergas). On 7 May, it was tested by A. Gustaitis and the aircraft was accepted for service. On 26 May 1930, the test board was appointed to test Fokker D.VII Nr.38 (Chairman A. Stašaitis). On 5 June, the aircraft was tested by Š. Januškevičius and accepted for service.

While undergoing repairs in 1928, Fokker D.VII Nr.3 and Nr.5 were reconstructed in the "Lithuanian manner", so they appeared similar to Nrs. 27, 37, and 38: The fuselage behind the cockpit was raised, a head rest added, and ground-adjustable trim tabs fitted to the elevators. For gunnery training, one machine gun was mounted. The undercarriage did not have the small wing-shaped fuel tank between the wheels, but, instead, it had two axles; one rigidly joined to the "V" struts and the second carrying the wheels and mounted with rubber shock cords to the first axle.

It was not until 1937, with the purchase Avro 626, and later Anbo-51 and especially the Bucker 133 Jungmeister were the old Fokker D.VII no longer needed.

While in Lithuanian service, there were only three crashed of the Fokker D.VII resulting in one fatality. (1) During forced landing, in 1921, Nr.2 was seriously damaged and not repaired. (2) A second Lithuanian Fokker (supposedly Nr.3) was lost in 1932 when, during aerobatics, the upper wing failed and the aircraft crashed at Kaunas airfield. The pilot, L. Miliunas, escaped by parachute. (3) On 13.07.1933, pilot-instructor A. Stukas perished when, during his landing approach, Nr.5 fell into spin and crashed at Kaunas airfield.

#### **Camouflage and Markings of the Lithuanian Fokker D.VII**

The Lithuanian Fokkers carried several different paint schemes and national markings during their service life.

The first D.VII, Nr.2, was entirely covered with a brown (ochre) fabric. The national insignia was of the second type: a red shield with white Vytis cross. This was carried on the white fin and rudder and on wings within 2-m wide white bands. The type designator and c/n was carried on the side of the fuselage in black.

During its early years, Fokker D.VII Nr.3 was named "The White Fokker" because of its overall silver (actually cellone with aluminium dope) scheme. The national insignia was of the third type: a white Vytis cross (with a black outline on light painted surfaces). This insignia was introduced on 12.04.1921.

In 1921-26, the fuselages of Fokker D.VII Nr.5 and Nr.6

were painted ochre with the engine cover of Nr.5 painted and that of Nr.6 in natural aluminium color. The fin and rudder of Nr.5 were ochre with a white Vytis cross, and on Nr.6 they were white with a black outlined cross. The wings of Nr.5 were ochre with white Vytis crosses and those of Nr.6 were silver (aluminium) with black-outlines crosses.

The Letov S-20L fighters purchased in 1925 from Czechoslovakia arrived in a three-color camouflage. Later, other Lithuanian military aircraft were painted in a similar scheme. After overhaul, Fokker D.VII Nr.3 and Nr.5 were painted in a three-color camouflage (dark sand, green, and brown) as was the new-built D.VII, Nr.27. The bottom surfaces of Nr.5 and Nr.27 were painted silver.

Since Fokker Nr.37 and Nr.38 were built only for training, they were not painted in multicolor camouflage, but in solid colors. Their fuselages were green and the wings were silver.

#### **Photos (on page 67 and 68)**

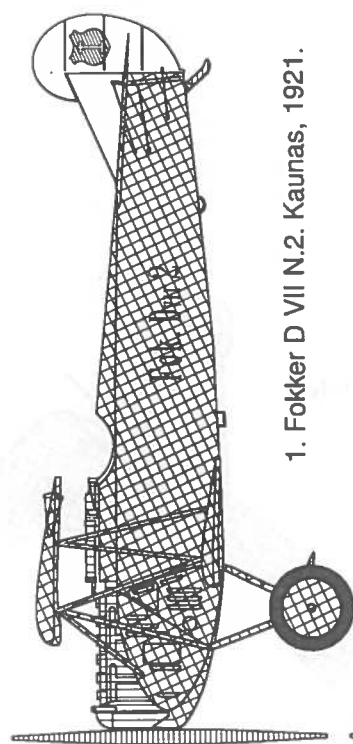
- a & b. Fokker D.VII Nr.2 with Lithuanian insignia of second type. Kaunas, 1921.
- c. A Fokker D.VII under repair at Kaunas airfield. About 1921.
- d. J. Dobkevicius in cockpit of Fokker D.VII Nr.3. Kaunas, 1921.
- e. Silver painted Fokker D.VII Nr.3 before the insignia had been painted). 1921.
- f. Fokker D.VII Nr.3, after reconstruction, flying over Kaunas. About 1926.
- g. Fokker D.VII Nr. 5 on summer airfield. 1924.
- h. A. Gustaitis beside Fokker D.VII Nr. 6. 1922
- i. Lithuanian pilots beside Fokker D.VII Nr. 3, 1925.
- j. Crash of A. Stukas' Fokker D.VII Nr.5 13.07.1933. During an attempted landing, the aircraft fell into spin and crashed on the border of Kaunas airfield. The pilot perished. (In this photo are visible the trim tabs on the elevator).
- k. Fokker D.VII Nr. 3 (?) with skis during winter flying (about 1930). Axles of undercarriage covered with smaller than original Fokker wing that were sometimes used on Lithuanian D.VII.
- l. Pilot J. Garolis in cockpit of Fokker D.VII Nr. 27. Summer 1928.

The author wishes to thank Dutch aviation historian Frits Gerdessen for information about construction of early Fokker D.VII.

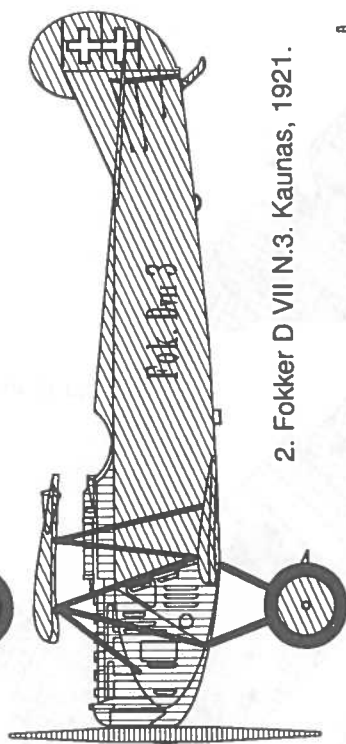
Translated by Saulius Stulas (SAFCH #1392), Lithuanian Technical Museum, Veiveriu 132, Kaunas 3010, Lithuania.

[Editor's notes: (1) This article first appeared in Plieno Sparnai, #2 (1994), the magazine of the Lithuanian Technical Museum and it is reproduced here with their kind permission. (2) Blue Rider has produced a decals sheet (BR235 £3.50) for the Lithuanian Fokkers. I will try to get some for sale through the SAFCH Sales Service, but until then order directly from Blue Rider. (3) Saulius is trying to update his computer system so he can produce better drawings of Lithuanian a/c more quickly. As you can imagine, this is not an easy job in Lithuania. If you can help, he can provide provide kits, decals, books, magazines, etc. from Eastern Europe in exchange.]

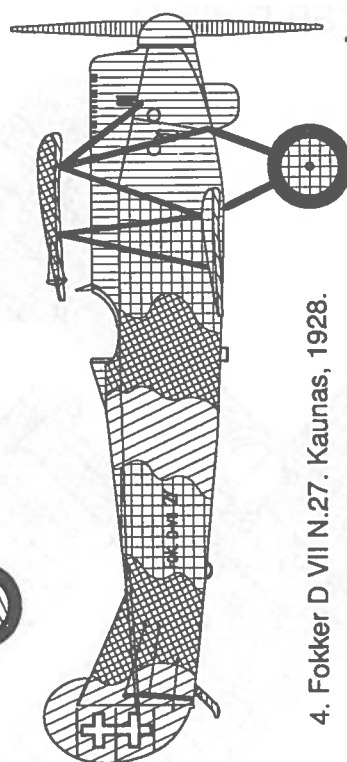




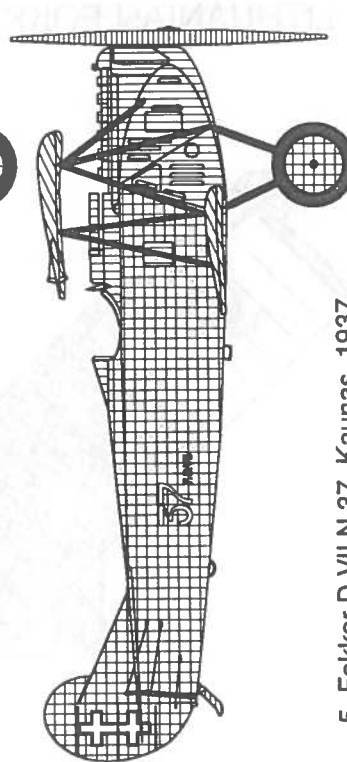
1. Fokker D VII N.2. Kaunas, 1921.



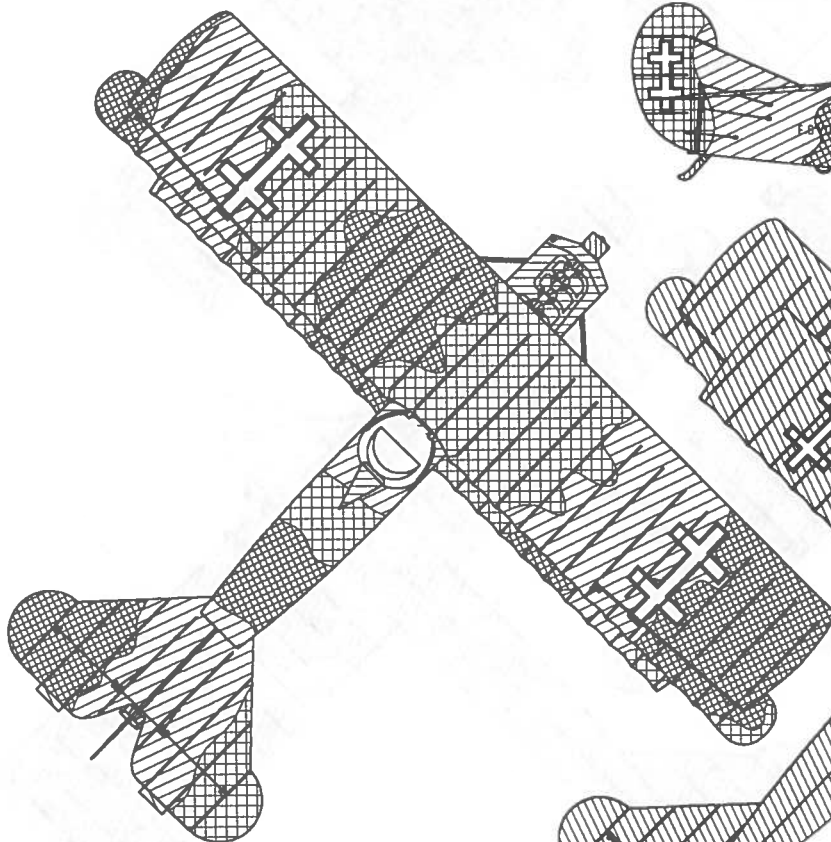
2. Fokker D VII N.3. Kaunas, 1921.



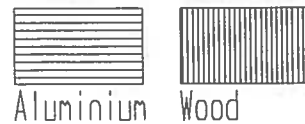
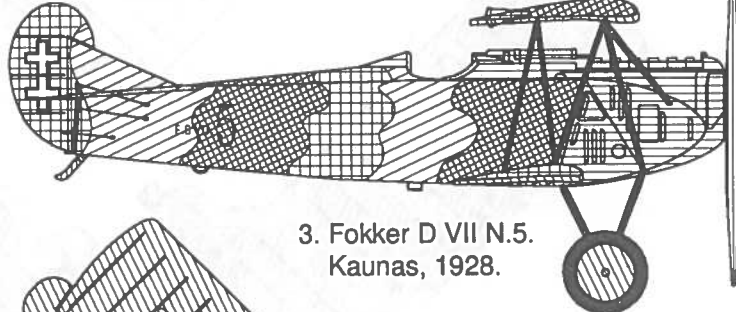
4. Fokker D VII N.27. Kaunas, 1928.



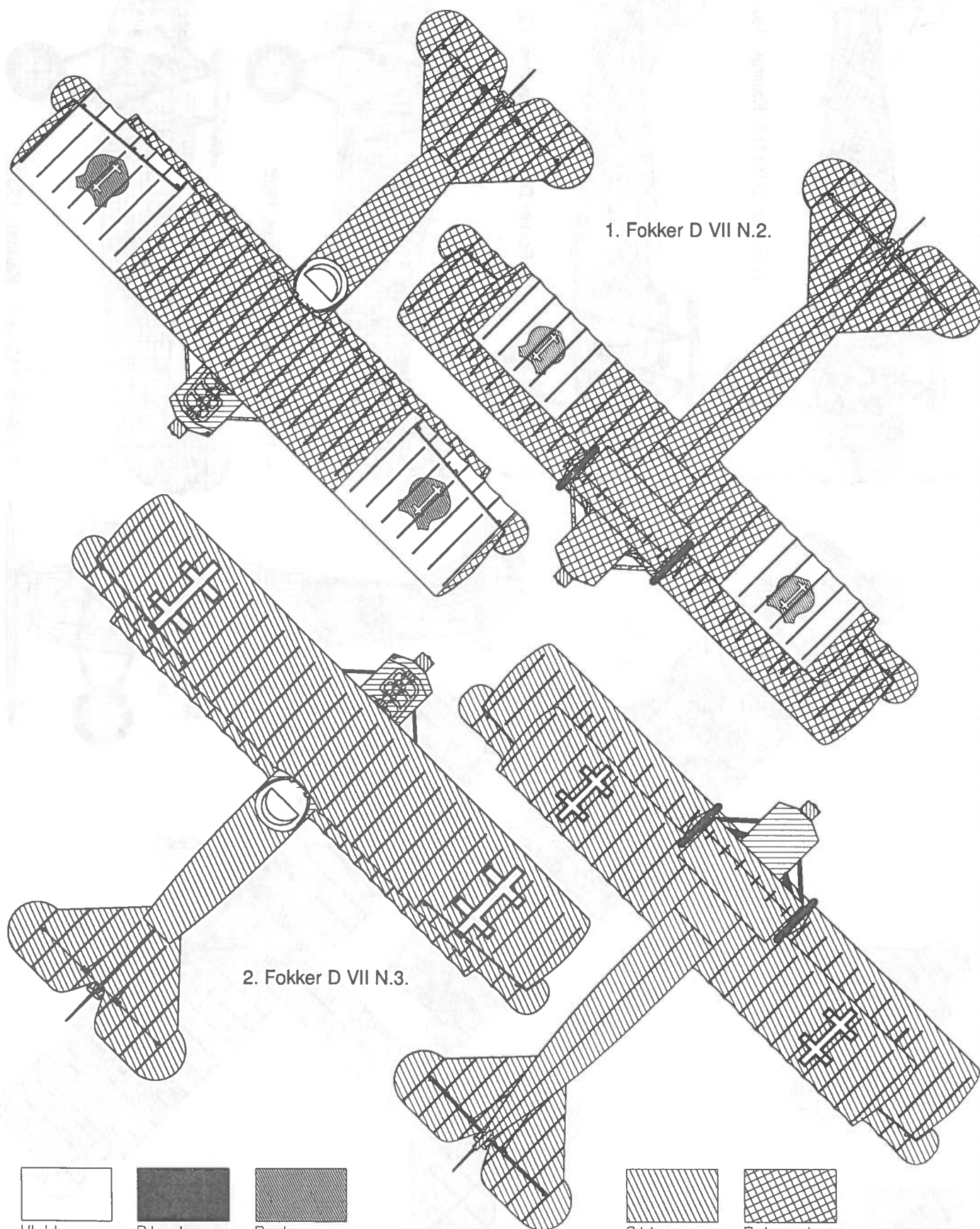
5. Fokker D VII N.37. Kaunas, 1937.



3. Fokker D VII N.5. Kaunas, 1928.



# LITHUANIAN FOKKER D VIIs



1. Fokker D VII N.2.

2. Fokker D VII N.3.



White



Black



Red



Silver



Ochre brown

# GRUPO DE TRANSPORTE AEREO: Paraguayan Air Force

Antonio Luis Sapienza

While the Grupo de Transporte Aéreo (GTA - Air Transport Group) was created in 1988, the origins of military air transport in Paraguay go back to 1939 when the Escuadrón de Transporte (Transport Squadron) was created with 2 Travel Air 6000, one Breda B.44, and 2 Caproni Ca.309 Ghibli. Later, the Transport Squadron operated 2 Beech UC-45F and one Beech AT-II during the 40s and early 50s. In 1947, a single Avro Anson Mk.V was acquired from Argentina and, in 1953, a Douglas DC-3A-G202A (c/n unknown), serial T21 (T for transport), was acquired from the U.S.

On 10 March 1954, the Transporte Aéreo Militar (TAM - Military Air Transport) was created to provide inexpensive and reliable air transport for passengers, cargo, and mail to the many isolated communities in Paraguay. DC-3 T21 was its first aircraft. To meet an every increasing schedule, TAM acquired, in 1955, five more Dakotas: two DC-3A, two C-47A/B, and one R4D-1. These were given serials T-23, T-25, T-27, T-33, and T-35. (Serials T-29 and T-31 were given to two Consolidated PBV-5A Catalinas which were temporarily transferred to TAM by Líneas Aéreas de Transporte Nacional (LATN) that same year).

In 1962, the US Military Aid Program (MAP) donated two C-47s to TAM. These were given serials T-37 and T-41. (T-39 was carried by a former Argentine Air Force De Havilland DH-104 Dove which was used as a Presidential Transport.) Donations through MAP continued during the 60s. In 1964, four more C-47s arrived (T-43, T-45, T-47, and T-49) and six were received in 1967 (T-51, T-53, T-55, T-57, T-59, and T-61).

By 1970, TAM's network had grown considerably, covering the whole country. A year earlier, in 1969, the Argentine Air Force donated three Douglas DC-3 to TAM, these were serialled T-63, T-65, and T-67.

Between 1970 and 1973, TAM received nine more C-47 thru MAP: T-69, T-71, T-73, T-75, T-77, T-79, T-81, T-83, and T-85. The peak of TAM's Dakotas operations occurred in the mid-70s when 24 aircraft were in active service. In 1976, TAM received its last donation from MAP: a single Convair C-131D which was given the serial T-93. The previous year, the Brazilian Air Force donated three Douglas DC-6B which became T-87, T-89, and T-91. These were the largest aircraft to serve with TAM. They saw little use on the domestic routes because of the lack of paved runways. However, the DC-6Bs were preferred for charter flights to Argentina, Uruguay, and Brazil. They were withdrawn from service in 1980.

In 1980, all T serials were replaced by four-digit numbers starting with 2001 (see chart below). In 1981, the Chilean Air Force donated two C-47s: 2028 and 2030, and, in 1984, TAM received its two last C-47s, 2032 and 2034, from the Brazilian Air Force.

Also in 1984, TAM bought four CASA C-212-200 from Spain, which were given serials 2027, 2029, 2031, and 2033.

TAM performed with great distinction during the periodic flooding of the Paraguay River, serving most of the cities which were isolated by high water. In 1982-83, the floods covered the cities of Pilar and Bahia Negra and TAM's C-47s evacuated people from both. TAM even lent a Dakota (T-35) to Líneas Aéreas Paraguayas (LAP) in 1971. It was given civil registration ZP-CCG and was used on the Asunción-Resistencia (Argentina)

route until the mid-70s when it was returned to TAM.

At present, TAM is part of the Air Transport Group whose main duties are: passenger, large cargo, and mail transport, personnel transport, and presidential transport. Since 1989, the GTA has received more aircraft including a single De Havilland Canada DHC-6 Twin Otter (ex ZP-GAS, ex FAP-01, and now FAP-02), a Beechcraft Super King Air 350 (FAP-01, and later sold), and a Boeing 707-321B (ex-LAP ZP-CCF, which is FAP-01 at present).

The GTA fleet currently consists of: Three Douglas C-47: 2010 (c/n 15872/32620), 2030 (c/n 12557) and 2032 (c/n 15653/27098); one Convair C-131D: 2001 (ex T-93, c/n 322); four CASA C-212-200 Aviocar: 2027 (c/n 307), 2029 (c/n 310), 2031 (c/n 315), and 2033 (c/n 316); one De Havilland Canada DHC-6 Twin Otter: FAP-02 (c/n 137); one Boeing 707-321B: FAP-01 (c/n 18957).

Most of TAM's destinations in Eastern Paraguay are served with the Aviocars, while the Western cities (Chaco Region) are served by the C-47s. The Twin Otter is used by the President in his journeys inside the country and the 707 when he travels abroad. The 707 is now being overhauled in Asunción.

The GTA has plans to re-engine the three surviving Dakotas with PT6 engines and to acquire at least two Lockheed C-130 Hercules in the near future.

**Photos** (on page 36; all photos taken at Asuncion International Airport by the author unless otherwise noted):

- a. Douglas C-47A-10-DK, s/n 2030, 1990.
- b. Douglas C-47, s/n 2028, June 1991.
- c. Douglas C-47B-25-DK, s/n 2010, October 1991.

Color scheme: The upper part of the fuselage (above the windows) are gloss white (HU022/FS17875). The rest of the fuselage, wings, and horizontal stabilizers are light grey (HU147/FS6495). A thin red line divides the white and the light grey on the fuselage. The Paraguayan colors are painted on the rudder with a yellow star on the white stripe. The TRANSPORTE AEREO MILITAR and PARAGUAY are above the windows in black. The serial is on the vertical stabilizer in black. The Paraguayan roundels are carried only on the wings in two positions: upper right and lower left. Before 1980, the light-grey part were natural metal. A black antiglare panel is painted on the nose.

- d. CASA C-212-200, s/n 2013, February 1987.
- e. CASA C-212-200, s/n 2033, 1990. (Peter Steinemann, via author)

Color schemes: Their color scheme is very similar to the C-47s, except the wings and horizontal stabilizers are white. The borders of all doors and emergency exits are red, as are the spinners. A black antiglare panel is painted on the nose. Besides having the serial on the vertical stabilizer, the last two digits are painted on the front fuselage.

- f. Convair C-131D, s/n 2001, March 1988. (Michel Anciaux, via author)

Color scheme: Same as C-47. At first it had FUERZA AEREA PARAGUAYA on the upper fuselage, but, in 1980,

this was changed to TRANSPORTE AEREO MILITAR.

g. De Havilland DHC-6, s/n FAP-02, July 1991.  
Color scheme: Same as C-47 and C-212.

h. Beech Super King Air 350, s/n FAP-01, 1991.

Color Scheme: Overall gloss white with red and blue striping. No roundels are carried. At first, the serial FAP-01 was in red on the vertical stabilizer, this was later changed to black under the blue stripe on the rear fuselage.

i Boeing 707-321B, s/n FAP-01, August 1994.

Color scheme: Gloss white fuselage with a red cheatline on the windows with red borders on the doors and emergency exits. The Paraguayan colors are on the rudder (no yellow star on the white stripe). Wings are natural metal except for the central upper part which is light grey, as are the engine cowlings. The Presidential emblem (which is the emblem on the Paraguayan flag) consists of a yellow star, surrounded by a palm branch on the left and an olive branch on the right, with REPUBLICA DEL PARAGUAY in black and encircled by three thin (red/white/blue) circles. This is carried only on the left front of the fuselage. The serial FAP-01 is on the rear fuselage under the red stripe. The FUERZA AEREA PARAGUAYA is in black. Roundels are carried in the same positions as on all GTA aircraft.

#### Emblems

The GTA has never had an official emblem. The following belong to TAM:

A. TAM's old emblem: All titles in black. A TAM DC-3 flying over a map of Paraguay. The map is green and the plane is white with a thin red cheatline along the fuselage. The background is light blue and the edges are red/white/blue.

B. TAM's new emblem: Black titles and edges. A sword with a star surrounded by olive branches with wings.

#### Acknowledgements:

The author would like to thank Mr. Dan Hagedorn for the information on the TAM C-47 fleet. Special thanks go to Col. José Samaniego, Maintenance Chief of FAP-01 (Boeing 707), for permission to take photos of the Presidential planes. Thanks to all TAM pilots and officers for the permission to reproduce data from TAM files.



B

#### Serial (1954-present)

2001 C131D (ex T-93)	2020 C-47B (ex T-83)
2002 PBY-5A (ex T-29)	2021 C-47B (ex T-77)
2003 DC-3A (ex T-23)	2022 C-47B (ex T-73)
2004 C-47A (ex T-41)	2023 C-47B (ex T-85)
2005 C-47A (ex T-27)	2024 C-47B (ex T-57)
2006 C-47B (ex T-45)	2025 C-47B (ex T-55)
2007 R4D-1 (ex T-35)	2026 C-47B (ex T-79)
2008 C-47B (ex T-51)	2027 C-212
2009 C-47B (ex T-37)	2028 C-47B
2010 C-47B (ex T-81)	2029 C-212
2011 C-27A (ex T-43)	2030 C-47A
2012 C-47B (ex T-61)	2031 C-212
2013 C-47B (ex T-47)	2032 C-47B
2014 C-47B (ex T-71)	2033 C-212
2015 DC-3C (ex T-63)	2034 C-47B
2016 C-47B (ex T-69)	4001 DC-3B (ex T-87)
2017 DC-3A (ex T-65)	4002 DC-6B (ex T-89)
2018 C-47B (ex T-53)	4003 DC-6B (ex T-91)
2019 C-47B (ex T-75)	

#### Cross reference from 4-digit serial to T-serials

2001 C131D (ex T-93)	2020 C-47B (ex T-83)
2002 PBY-5A (ex T-29)	2021 C-47B (ex T-77)
2003 DC-3A (ex T-23)	2022 C-47B (ex T-73)
2004 C-47A (ex T-41)	2023 C-47B (ex T-85)
2005 C-47A (ex T-27)	2024 C-47B (ex T-57)
2006 C-47B (ex T-45)	2025 C-47B (ex T-55)
2007 R4D-1 (ex T-35)	2026 C-47B (ex T-79)
2008 C-47B (ex T-51)	2027 C-212
2009 C-47B (ex T-37)	2028 C-47B
2010 C-47B (ex T-81)	2029 C-212
2011 C-27A (ex T-43)	2030 C-47A
2012 C-47B (ex T-61)	2031 C-212
2013 C-47B (ex T-47)	2032 C-47B
2014 C-47B (ex T-71)	2033 C-212
2015 DC-3C (ex T-63)	2034 C-47B
2016 C-47B (ex T-69)	4001 DC-3B (ex T-87)
2017 DC-3A (ex T-65)	4002 DC-6B (ex T-89)
2018 C-47B (ex T-53)	4003 DC-6B (ex T-91)
2019 C-47B (ex T-75)	

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A

# The HEINKEL He 111A-0 IN CHINESE SERVICE

D. Y. Louie, P.E.

The government of Guangdong Provincial ordered ten Heinkel He 111A0 bombers in 1935. Six of these under-powered bombers were delivered to warlord Chen Jitong's private air force the following year. When the Guangdong Provincial Air Force merged with the Nanjing Central Air Force in 1936, only three of these six He 111A-0s were still airworthy. They were promptly pressed into service with the 19th Squadron, 8th Bomb Group, stationed in Nanchang, Hubei Province.

Following the outbreak of the SinoJapanese War on 7 July 1937, the three He 111A-0 were deployed to Daijiaochang AFB in Nanjing, the capital of Nationalist China. On 24 August, Capt. Xieh Mong, Commander of the 8th BG, received an order to attack Japanese naval craft moored at the Wusung delta (a tributary of the Yangji River). These orders stipulated that the Heinkels were to be refueled and armed at 0530 on August 25 and then join two Martin B-10s from the 30th Squadron above Juyung at 12,000 ft for the bombing mission. Five P-26s of the 17th Squadron would provide escort for the five bombers.

Captain Xieh's three He 111A-0s took off at 0800 on August 24, from Hankow to rendezvous with the B-10s heading for Nanjing. General Claire Chennault, then a consultant of the Chinese Air Force, provided technical advice for the upcoming bombing mission.

On the morning of 25 August, the He 111A-0s, led by Capt.

Xieh Mong, whose He 111A-0 bore the fuselage number 1902, each armed with two 250-kg HE bombs, took off as scheduled. Reaching an altitude of 7000 ft, the He 111A-0s were joined by the two Martin B10s led by Capt. Xi Yuxin flying astern at 12,000 ft. John "Buffalo" Wong led the five P26s which met with the bombers above Juyung. As the group approached the target from the north, the three Heinkels lost contact with their escorting fighters in a heavy overcast. Nevertheless, they carried the attack against a Japanese convoy protected by the IJN gunboat Ataka. A supply ship was sunk.

Devoid of escort fighters, the lumbering He 111A-0s were caught by Japanese fighters. Two He 111A-0s were shot down. The third escaped and was sighted by five "friendly" Hawk IIs from the 28th Squadron. A young cadet, Peng Zhou, mistook the wounded He 111A-0 for a Japanese bomber and he shot down the only remaining He 111A-0 of the Chinese Air Force!

The Chinese Air Force managed to rebuild a He 111A-0 from parts of other He 111A-0s. This hybrid He 111A-0 was reported to have participated, as a reserve bomber, in the bombing of Japanese homeland by two Martin B10s in 1938.

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## -books-books-books-books-books-books-books-books-books-books-books-books-books-books-books-books-

**Le Sacrifice, Les Breguet 693 de l'Aviation d'Assault dans la Bataille de France**, by Olivier Ledermann and Jean-Francois Merolle. A-4 size, 196 pages. Published by IPMS-France, 108 rue Saint-Maur, 75011 Paris, France. Softbound. 1994. 250 FF, postage not included.

This is, as far as this reviewer knows, the first book published by IPMS-France, and it is an outstanding job. Printed on high-quality glossy paper bound between sturdy card covers it is as good a single-type monograph that you are ever likely to see. The text is provided in parallel French and English. Since there are three columns of French to each column of English, I suspect that the English translation has been somewhat abbreviated. However, this is not necessarily a bad thing; digging out the "missing" information will give the reader a change to practice his high-school French. The text begins with a summary of the French military aviation philosophy and the French aviation industry before WWII, then it describes operations during the "drole de guerre", during the fateful Spring of 1940, and during the Vichi period (when the Breguets wore "slave livery"). Additional chapters relate the history of each escadrille that operated the Breguet 391/3/5 and camouflage and markings carried by the Breguets. The several "Annex" gives a day-by-day account of each unit operations, technical data, and a table detailing each aircraft lost. All this is heady stuff. For example, we learn that on 12 May the Breguets were sent to attack German armor near Maastricht, Belgium; "seventeen aircraft went fighting that day and only three came back". Elsewhere we learn that the gunners "in their semi open cockpit, seated on a sort of uncomfortable bicycle saddle, were really not a ease when attacked by Messerschmitt Bf.109s" (Gallic understatement?).

An interesting story is that of a gunner, not knowing his pilot had already jumped from their fatally damage Breguet, shot down two 109 before his plane crashed. The modeler will be encouraged to read that the pattern and shades of the camouflage colors varied greatly; in particular, "green, which at first was defined as 'khaki', was seen as a wide range of colours, from light green to very deep green" and "brown, which was theoretically meant to look like some sort of 'chocolate' tone, also differed considerably from a clear chesnut (sic) to a dark reddish brown".

While this is exciting, it is the illustrations that take your breath away. Photos, which seem to fill every page, are superbly reproduced. There are three color action paintings, full-color escadrille insignia, and eight color side-view drawings. The last 14 pages of the book are devoted to 1/72-scale drawings and sketches for the 391, 393, and 395. Lastly, there are two large pull-out pages; one provide color 4-view drawings of a 391 on one side and a 395 on the other side; the other page provides 1/48-scale drawings for the 393 on one side and for the 395 on the other side.

This is not only the definite work on the Breguet 393 series, but it also set a standard for other books on a single aircraft type to try to emulate. Highly recommended. Review copy graciously provided by IPMS-France.

**Heinkel He 111**, by Robert Michulec. Aircraft Monograph #2. A-4 size, 60 pages. Softbound. Published by Agencja A.J. Press, PO Box 73, 80-461 Gdansk 45, Poland. 1994.

The books on aircraft coming out of Poland in recent years have be highly praised for the high quality of research, the excellent scale drawings,

and the first-class printing. However, they have had a rather limited appeal because of the language difficulty. Now, A.J. Press has eliminated this impediment by coming out with a series written in English.

The He-111 is the second in this series. (I haven't seen the first on the Su-15.) The text is extensive with a density of information that would make Jay Miller (Mr. Aerofax) envious. Chapter titles are: Research and Development, Export (sic) (China, Rumania, Hungary, Slovakia, Spain, Turkey, Bulgaria, Captured Aircraft), Camouflage and Markings, and Heinkel 111 in Service (Over Spain, Over Poland, Over the North Sea, Over Norway, Over France, Over England, Night Operations over Britain, Over the Balkans, Over Iraq, Over the Soviet Union, Over the Seas, Over Europe). The text is well written in idiomatic English without the awkwardness found in many translations.

This text and the accompanying photos tell the complete story of the He-111 and are well worth the price of the book. However, there is more. There are 15 brilliant color side views (including Spanish, Hungarian, & Romanian aircraft) and two color 3-view drawings. However, the thing that takes the breath away from even the most jaded enthusiast are the 1/72-scale drawings, 16 pages of them. All variants are covered from the A-0 to the CASA 211. (I never realized how formidable a task it would be to convert an existing He-111 kit to an earlier version with the stepped canopy. I think I'll wait for a kit so I add Chinese, Spanish Civil War, and Turkish 111s to my collection. Conversion to a the Rolls-Royce powered CASA 2111 appears to be a cinch.)

Here is a book that is a must for all small-air-force enthusiast. My only regret is that there are no



illustrations of Chinese, Slovakian, Turkish, or Bulgarian He 111. Oh well, they have to leave something for SAFO to do. Any takers? Or, does A.J. Press have these on their cutting room floor?

**FW 189**, by Zbigniew Luranc. Skrzydła w Miniaturze #11. A-4 size, 52 pages. Softbound. Published by Avia Press, PO Box 11, Gdansk 45, Poland. Here's another example of the superb publishing coming out of Poland these days. While I can not comment on the text, which is in Polish, the photos, color art work, and scale drawings raise this to a publication of the first rank. There are 16 color side views (including one Slovak and two Hungarian a/c), one color 3-view, 7 pages of 1/72-scale drawings, and 9 pages of sketches (from original documents?).

After building models in Slovak and Hungarian markings, if the conversion bug bites you, there always the V6 with its ugly (with a capital UGH) armored fuselage or the elegant B-1 trainer.

A few days ago, while rummaging through some old magazines, I ran across a long article on the FW-189 with lots of color side views. There was not one illustration of a non-Luftwaffe machine. In contrast, the cover of Skrzydła w Miniaturze #11 has a color painting of a Hungarian Fw-189. We've come a long way, baby!

**The Sky: Our Country** - 25 years of the Republic of Singapore Air Force. 191 pages, 24 cm by 32 cm. Hardbound. Published by the Republic of Singapore Air Force. 1993.

This is a typical "air force" publication with lots of photos of personnel, equipment, photos of aircraft silhouetted against the sunset, but little on a/c and their markings. Among the few exceptions are some nice close-ups of the new lion-head national insignia and a couple of informative photos of the red/white A4S Skyhawks of the Black Knights demonstration team. In addition, the diorama builder will find inspiration in many of the "activity" photos.

This is a fine book for its type. All the photos are in color and are extremely well reproduced on high-quality glossy paper. Highly recommended for the collector of this genre. One copy is available from the SAFCH for \$24 plus \$3.00 postage and packing.

**Vzduch je naše More: Československé Letectví 1818-1939**, by Jiri Rajlich and Jiri Schnal. A-4 size, 188 pages plus 40 color plates. Hardbound. Published by Nase Vojsko, Praha. 1993.

Books on Czechoslovak aircraft are not exactly rare these days, but to this reviewer's knowledge, this is the first one to cover the entire period from 1818 to 1939 since Vaclav Nemecek's seminal "Československá Letadla" by the same publisher, in 1958 (with an enlarged edition coming out in 1966). While I can not vouch for the accuracy of the text, it being in Czech and I being in English, the breadth of coverage is impressive.

I can, however, critically evaluate the photos, most of which I have not seen published previously, which are well reproduced. The "piece de resistance", however, is the approximately 160 color side-view drawings. A full list of these drawings is not practical, but mentioning the general categories will give a good idea of the breadth of coverage in this book: WWI a/c (many in early, unofficial air-force markings) of every nationality, military a/c of Czech origins (with a lots of imports thrown in for good measure), civil a/c of both Czech and foreign origin, and Czech a/c in foreign service (Belgian BH-21, Lithuanian S-20, Finnish A-11,

S-218, & A-32, Polish BH-33, Yugoslav S-16 & Fokker F-39, Turkish S-16, Estonian S-228, Spanish S-231 & A-101, Egyptian Be-550, Soviet Ba-122, Bulgarian B-135, 9 a/c in Luftwaffe markings, ....) Enough already! My mouth is watering all over the keyboard. I pray to the patron saint of modelers to open the eyes of KP so they will go back to doing what they did best - kits of Czech a/c. [Editor's note: Who is the patron saint of modelers?]

This book is highly recommended to the enthusiast just beginning to collect information on Czechoslovak aircraft. The enthusiast with an extensive library on Czechoslovak aircraft will find this book a valuable addition to his collection. [Editor's note, two copies of this book are available from the SAFCH Sales Service.]

**414, Asi jsme se Srazili: z Historie 5. Stihacího Leteckého Pluku**, by Josef Faul. A-4 size, 104 pages. Numerous photos, 6 pages in color. Published by Zlinek, P.S. 8, 763 14 Zlin 12, Czech Republic. Softbound. 1994.

Our friend, Jaromir Stepan (SAFCH #1266), has been producing his fine magazine, Zlinek, for a number of years, but this is the first time he has ventured into publishing books.

This book, written entirely in Czech, describes the history of the Czech 5th Fighter Regiment from the time of its service in Great Britain as 312 Squadron to the present time. Only 12 pages are devoted to the Spitfire era (1940-1949), but thing quickly get to the MiG era. There are 11 color side views (Hurricane, Spitfires, MiG-15, MiG-19, MiG-21, L-29, & L-39) and 10 color photos of MiG-21.

The book is printed on good-quality, high-gloss paper so the reproduction of the b&w and color photos is excellent. This is important since this is mainly a photo book (I gave up trying to count the number of photos). The color art work is superb and there are many tables including ones listing the serial numbers and disposition of all MiGs used by this unit.

While Zlinek, the magazine, can be unreservedly recommended to everybody because of its wide-ranging coverage and its English-language text, this book can be recommended only for the specialist in recent Eastern European aviation or, more specifically, MiGs. Review copy provided by Jaromir Stepan.

**A 'Messzer': Bf 109-ek a Magyar Királyi Honvéd Légierőben**, by Punka György. A-4 size, 144 pages, 168 photos, color cover painting, 13 b&w side-views, 12 color side-views, tables, and maps. Softbound. Published by OMIKK - Budapest, 1995. This book will probably become the definitive study of the Bf-109 in Hungarian service. Unfortunately, the text is in Hungarian and the photos are not very well reproduced. However, the large number of photos, the extensive tables, and the side-view drawings makes this a must for all Bf-109 enthusiasts. One table lists all Puma Squadron pilots with 5 or more victories giving the type of a/c destroyed and date. Another table seems to list 109 losses by date, code, and place. I say "seems to list" because I have great difficulty translating Hungarian. There are many other tables, which I am sure are of great value, but I am unable to fathom their intent at a glance. Another outstanding attribute of this book are the outstanding b&w and color side-view drawings well reproduced on glossy paper.

If this book were ever translated into English and published with good photo reproduction, it would be a must for all WWII small-air-force enthusiasts. In its present form, I can not recommend it to the

general enthusiast. However, it would make a valuable addition to the collection of any Bf-109 specialist. I can get this book for anyone wanting one from our friend in Hungary at \$20.00 plus \$3.00 for postage and packing.

**ACE Publication**, ul. Stysia 18/9, 53-526 Wrocław, Poland. This is a new series of books with the emphasis on "aces" and their aircraft. The three books at hand are of similar format: A-4 size, with 44, or more pages, on high-quality paper with heavy, gloss, stiff covers. There are lots of photos of both the "aces" and their aircraft (almost always together) and 8 pages of brilliant, well-reproduced color. Unfortunately, all the text is in Polish, but the tables and photo captions ("Stefan Stec w kabinie Fokkera D.VIII (187/18) z 7 Eskadry") are usually easy to figure out. Try your luck with "zginal w czasie lotu bojowego" as a footnote next to a date attached to an aces name in a table. If you can get this one, you'll have no trouble digging a lot of useful information out of these books. Review copies provided by SAFCH member Przemyslaw Skulski.

**Curtiss P-40 Warhawk**, Przemyslaw Skulski and Tomasz Gronczewski. 44 pages, 38 photos, color cover painting, 12 color side-views, color center-fold, 5 pages of 1/72-scale drawings, 8 side-view drawings showing evolution from P-40B to P-40Q, numerous sketches of exterior and interior details, and several pages of tables. Published in 1993.

Aces discussed and illustrated are Duke, Johnson, Pokryszew, Fiskien, DeHaven, Pierce, Caldwell, and Alison. Tables present technical data, P-40 aces (RAF, RAAF, RNZAF, USAAF, & USSR) with P-40 and total victories, and kits, accessories, and decals.

**Asy Wojny 1914-18**, Przemyslaw Skulski and Wojciech Sankowski. 44 pages, 39 b&w and 8 color photos of preserved a/c, 40 color side-views, and 4 pages of tables. Published in 1994.

In my opinion, this is the "pick of the litter" with outstanding color art work and information on WWI aces for all countries. There are tables for the top aces listed by country: Britain (42 aces with from 25 to 73 victories), Germany (53 aces with from 25 to 80 victories), France (35 aces with from 12 to 75 victories), Poland (9 aces with from 3 to 9 victories not counting post-WWI victories), Italy (10 aces with from 11 to 34 victories), Belgium (5 aces with from 8 to 37 victories), Russia (19 aces with from 5 to 17 victories), USA (15 aces with from 10 to 28 victories), & Austro-Hungaria (19 aces with from 8 to 35 victories). Some of the names will be familiar, other not so familiar (Arigi, Ball, Baracca, Barker, Bishop, Boelcke, Brumowski, Collishaw, Coppens, Demeuldre, Ehrlich, Fiala, Fonck, Garszka, Guynemer, Heurtaux, Kozakow, Kiss, Kruten, Linke-Crawford, Luke, Mannock, Marinovitch, McCudden, Montrion, Navarre, Navratil, Nungesser, Peter, von Richthofen, Rickenbacker, von Schleich, Stec, Stojasavljevic, Udet, and Voss. One a/c for each "ace" is shown in color. Just think of the "theme" collection that can be built from this one reference. This book is a must for anyone interested in WWI. [Editor's note: Building a collection of 40 a/c of the "aces" should be sufficient to get someone listed as "PC Enemy Number One" by the Smithsonian.]

**Asy Frontu Wschodniego**, Przemyslaw Skulski, Janusz Bargiel, and Grzegorz Cisek. 44 pages, 39 photos, 39 color side views, 3 pages of tables. Published in 1994.

Another fine study of aces and their aircraft, this

time on the Eastern Front in WWII. Aces described and illustrated are Amet Chan, Andre, Chobystow, Dolguszyń, Glinka, Kalinowski, Klubow, Kostylew, Kozeđub, Litwak, Luganski, Pokryszkin, Reczkalow, Safonow, Srom, Wybor-now, Aldecoa, Bozik, Galic, Graf, Hafner, Hartmann, Heppes, Juutilainen, Lang, Nowatny, Philipp, Rall, Rudorffer, Serbanescu, Tuominen, Weissenberger, and Wind. The tables list German (49 aces with from 120 to 348 victories), Soviet (53 aces with from 30 to 62 victories), French (14 aces with from 5 to 11 victories), Finnish (17 aces with from 20 to 92 victories), Romanian (6 aces with from 5 to 60 victories), Hungarian (5 aces with from 18 to 29 victories), Slovak (12 aces with from 7 to 32 victories), Croatian (11 aces with from 12 to 38 victories), and Spanish (7 aces with from 7 to 12 victories).

Again, a great reference for "one stop shopping" for a ideas for a "theme" collection". How about starting a collection of the aircraft flown by women aces with a model of Lidia Litwak's Yak-1 (11 victories)?

**F-86 Sabre: MiG Killer**, Witold Kowal and Przemyslaw Skulski. 52 pages, 49 b&w photos, 3 pages of 1/72-scale drawings, 20 color side views, 9 side views showing evolution from XFJ-1 to CA-27, 7 pages of sketches, and 5 pages of tables. Published in 1995.

While this book goes over well-covered ground, it does so very well. Of particular interest is the description and illustrations of the Sabre Aces: Alam (Pakistan), Davis, Jabara, Hagerstrom, McConnell, and Whisner. Tables include technical data, Korean War aces ((39 aces with from 5 to 16 victories), and kits, accessories, & decals.

**Aerial Nationalism: A History of Aviation in Thailand**, Edward M Young, Smithsonian Institution Press (to order: Box 960, Herndon, VA 220700960), 1995; 330pp, \$55.

The author visited the Royal Thai AF Museum at the Don Muang airport in 1962, and noticed, among other things, some very early fabriccovered aeroplanes tucked away in back. Interested, he later found that aviation in Thailand began in 1911, following a flying demonstration held in 1910 with a Farman: a full-scale air meet was held in January 1911; shortly after, several officers were chosen to train in France. After the US declared war, Siam followed suit, and a contingent of pilots was sent to France for military training. But the war ended

before they could serve. The subsequent construction of some of these French a/c sparked growth in related industries, like metal fabrication and the manufacture of plywood; and in overseas orders, like the ubiquitous Curtiss Hawks.

The book carries the development of the industry and related aviation activities through 1945. One of the interesting points is the author's belief that several of the later Thai rulers wanted the uses of the airplane developed in their country, partly for smallscale military work and civil work, partly for the effect it was having on the morale of the people: a really modern development in Thailand.

Photos, but not enough, and poorly reproduced. Probably unavoidable.

[Editor's note: This review was provided by WWI AERO via Leo Opdycke.]

**Aerial Nationalism, A History of Aviation in Thailand**, by Edward Young. Published by Smithsonian Institution Press, 1994. Price in Britain is £43 (about \$73), but it is probably much less expensive in the USA.

This has to be the definitive history, in English, on Siamese/Thai aviation. It covers the period from the establishment of Siamese military aviation during WWI, the build up of the Siamese AF in the '20s and '30s, and, most importantly, the Franco-Thai air war and the Thai AF's participation in WWII. These are covered in great detail, thus filling a major gap in "small air forces" history. Details are also given of Siamese Civil air operations and the Thai naval air arm. The post-war years are covered in less detail, but it is still a complete history. There are lots of tables showing Siamese/Thai AF orders of battle and some interesting photos. My favorite being the very-rarely illustrated Thai Nakajima Ki-27. In short, if you're interested in the subject, you must get this book. The only nit-pick is that there is no mention of when the Thai AF changed its national insignia from roundels, to flags, to white elephants.

John MacGregor (SAFCH #766), 13 Foggyley Garden, Dundee, DD2 3LG, Scotland.

**Kuwait Air Force:** Our friend in Germany has sent us his "last" booklet on the KAF. These are the Arabic-language edition. Several readers had asked this book, but it was out of stock and, since I thought it was no longer available, I removed their names from the list of back orders. Anyone can request this book, but I will give preference to

anyone who writes immediately and tells me that he had requested this book earlier. The price remains \$7.00.

"According to my correspondent Carlos Lazaro, Antonio Arias' Spanish Civil War/WWII memoirs have appeared as 'Sangre en el cielo' (Blood in the Sky). [This is the same title as Francisco Tarazona's memoirs as first published in Mexico; in Franco's Spain, this title was changed to 'Yo fui piloto de caza rojo' (I was a Red Fighter Pilot).] Lazaro also has a 150-page article on the four classes of Loyalist aviators trained in the USSR during the Spanish Civil War.

"Angelo Emiliani has received, from Francisco Merono Pellicer, a 136-page biography of Loyalist fighter pilot Jose Maria Pascual Santamaria, but unlike Arias' book, this has not yet been published. "Arias' memoirs are selling at 2950 Pesetas (about \$24.00)."

Tom Sarbaugh (SAFCH #497), #450 Boynton Ave., Berkeley, CA 94707-1702, USA.

**Lockheed Hercules Production List 1954-1966**, by Lars Olausson. 13th Edition. 124 pages. Spiral bound. Published by Lars Olausson, Box 142, S-530 32 Satenas, Sweden. Price \$12 surface or \$14 air-mail. Obtainable directly from the author. Cash only; his bank charges \$9.20 for cashing a check. [Editor's note: Damn money changers. It can't cost this much to exchange money. Don't they realize how much this hurts international cooperation? Or, don't they care?]

Long-time SAFO readers will remember the praise this reviewer has heaped on the earlier editions of this true labor of love. The latest edition continues to inform and excite admiration. For those not familiar with the format, this book lists every Hercules built by c/n giving model, original user, registration, & delivery date, and subsequent history including change in units, owners, and ultimate fate. Additional tables allow cross referencing by listing modified a/c, c/n numbers by civil registration, commercial operators, and government operators. This latter table allows the reader to determine the c/ns of all Hercules operated by a given air force; then reference to the main table allows the history of each a/c to be determined.

Highly recommended. Don't you wish somebody had done this with your favorite a/c?

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**Aero-Plan**, Ilustrowany Magazyn Lotniczy. Published by Agencja Lotnicza ALTAIR Ltd, ul. Warecka 11/36, 00-034 Warszawa, Poland. 6 issues 120 tys. zł.

This new magazine from Poland is edited by SAFCH member Robert Gretzyngier and many other SAFCH members are listed on the masthead. The two issues at hand, are very well done on a high-quality glossy paper that permits excellent reproduction of the photos and the color art work. This magazine can hold it own with anything produced in the West, except Avions (but what can compete with Avions?).

1/94 (44 pages) "Szpiegowskie Spitfire'y" 16 pages including 13 photos, 9 color side views, 6 tone side views, and 1/72-scale 6-view drawings of Spitfire PR typ C and PR.XIII with additional 1/72-scale views of PR typ G and F. "Aily Lotnicze Panstw bylej Jugoslawii" 12 pages on the a/c of the former states

of Yugoslavia including 6 color and 8 b&w photos, 13 color side views, and 11 tone side views. All factions are represented: Serbia, Bosnia-Herzegovina, Slovenia, Croatia, Krajina Serbs, and Bosnian Serbs. This is the best-illustrated article I've seen on the subject. "Samoloty Oeffag w Lotnictwie Polskim 1918-1920" 6 pages describing each individual Oeffag CI and CII in Polish service; includes 9 photos and 4 color side-views. No higher recommendation can be given than the fact that the author is Tomasz Kopanski. "Ostatni LIM" one page with 9 color photos of a very colorful Polish MiG-17. "Flygflottilj 19" 7 pages on Swedish participation Finland's Winter War. Includes 6 photos (Gladiators, Harts, Junkers F 13, and Waco ZQC-6), table of individual a/c, drawings of 5 Gladiators and one Hart showing complete camouflage patterns, and 3 color side views of Gladiators.

2/94 (44 pages) This issue introduces several new

departments: An "Update" with 4 more photos of a/c of the states of the former Yugoslavia, and 2 more of Polish Oeffag CI. A "Spotter" section with 12 color photos (Egyptian Zlin Trener, Danish Lynx, Swedish Hercules, Armenian Tu-154 'EX-85536', among others. "Szpiegowskie Spitfire'y (II)" 16 more pages on PR Spitfires, including 16 photos, 13 color side views, 1/72-scale 5-view drawings of PR.IV and PR.XI in addition to 1/72-scale side views of PR.IX & PR.X and sketches of camera installations. "Juliusz Gilewicz" 5 pages including 10 photos and a color side view of his Nieuport 24bis with his familiar personal insignia of a naked "Diana the Huntress" on the fuselage. "Lotnisko Mokotowskie - 2 Wrzesnia 1945" 6 pages on Polish a/c in Warsaw in September 1945. Includes 11 photos and tone drawings of 4 UT-2 and 4 Szcz 2. "Samolot Rekordowy P-42 (T10-15)" 2 pages including 5 color photos and drawings of differences

from standard MiG-29. "Rekin a Engelsa" one page with 7 color photos of Soviet Tu-22 at airbase Engles. "Tajemnica Losi" 5 pages on building a model of the PZL P-37 Los. Includes 1/72-scale drawings of interior detail. [Editor's note: Thanks to Aero-Plan for publishing a promotion for SAFO.]

"Here is a summary of the latest issue of **AEROPLANO: Revista de Historia Aeronautica**. (The summaries for issues #1 to #9 were published in SAFO #65.)

#10 1992: "Biography of Captain General Angel Salas Larrazabal". "Wings (Flight from the Mythological Point of View)". "200th anniversary of the First Manned Flight over Madrid". "Atlantic and Spanish Aviators" ("Iberian Aviators" would be more logical, since Portuguese aviators are also remembered in this article on Atlantic record flights). "The Historical Flight of the Dragon Rapide" (of Franco fame, as you all know). "The Chatos in Spain, Part III". "Sailor, Airman and ... shipwrecked" (memories of Republican Lieutenant Juan Antonio Ibarreche). "112 Group: The Unknown One". "Francisco Valiente: The Last Victory of Escuadrilla Azul" (Spanish fighter pilots in Russia). "Pollensa's Flying Boats Base". "History of CASA Prototypes: C.201 Alcotán, C.202 Halcon, and C.207 Azor". "Press and Aviation". "Earth and Sun Magnetism: a History of their Discoveries". "A Day in the Life of 100 Sabre Pilots: May 1959's Air Parade".

#11 1993: "The Edward Warner Award: The Nobel of the Air". "Indalecio Riego's memories". "Nationalist Fighter Schools: Gallur and Villanubla". "Reminiscences of the Old Grumman (Albatros)". "Jerez Air Base". "The Critical Three Years: 1909-1911 (from balloon to aeroplane)". "Curious Photographs (20s and 30s vintage)". "Spain and Airships". "CASA C.201/E-25 Mirlo". "National Distance Air Records (10s and 30s)". "Aviation in the Sahara". "Spanish Heinkel He 112 Os and Bs". "Notes for the History of Bacalaos (Do 17s) Postwar". "Biography of Ramon Salas Larrazabal". "The Rohrbach Roland and the First IBERIA".

#12 1994: "Tablada Air Base" Interview with Enrique Mapelli (aeronautical jurist). "AISA I-11, I-115, and I-11B". "Republican Fighter Schools". The 2nd Escuadrilla de Chatos, 1938-39". "Foreign Help" (in the SCW). "50 years of Aeromodelling". "The beginnings of the Fighters in the World and Spain". "The Grumman Delfin in the Ejercito del Aire". "National Altitude and Range Records" (10s and 20s). "Viriatos do Ar" (Portuguese pilots in the SCW). "Guadalajara, 1896/1906: Militia, Ballooning, and Science". "Biography of Lieutenant General Gavilan Ponce de Leon" (SCW and WWII veteran).

"Issues can be ordered from: Instituto de Historia y Cultura Aeronauticas, C/ Princesa 88, E28008, Madrid, Spain. Or from: Libreria Miguel Creus. C/ Congost 11, E08024, Barcelona, Spain. One issue per year. Price US \$12.00. I have enclosed a copy of #12 for sale to some lucky SAFO member. Juan Carlos Salgado (SAFCH #1311), Carretera de Bosende (Tolda) 36, 27169 Lugo, Spain.

"The information in SAFO #72 on the magazines *Journal of Military Aviation* (US) and *Exclusively Aircraft* (British) needs updating. The former ceased publication in late 1993, which was a great pity as it was an excellent magazine. I have not seen

a copy of the latter since the December 1992 issue, the only one I saw in New Zealand, so I assume that it too has folded. However there is yet another new British magazine, called *Air Power International*, which is similar to *Air Forces Monthly* in that it covers modern military aviation; mostly color photos, many of small-air-force subjects.

"Issue 1, September 1994. NATO Tiger Meet, lots of nice photos and special schemes. Czech MiG23 with devil markings (3) and Czech MiG21 '7711' with colored trim. Luftwaffe Alpha Jet of JBG49 in a very nice white and light blue scheme with the German national colors wrapped around the wings and tailplanes (3). Eurofighter 2000. Spanish Mirage F.1 in overall light grey with medium-grey rudder crosses. Portuguese Alpha Jet with no insignia visible above the port wing. Slovak MiG-29 '7501' with white/blue/red trim. Canadian CF-18 with D-Day style invasion stripes. Greek F-4E. Swedish Viggen (2), Draken, Super Puma, Hercules, Lansén, and AEW Metro.

"Issue 2, October 1994. Malaysian Hawks (2). Luftwaffe Hansa Jet with blue/white fin, black/red/yellow wings and badges inboard of the national insignia (no cross under the port wing). Norwegian F-5A with triangular 'flag' type markings. German CH-53G, Bo-105, and Mi-8 in special schemes. Greek Phantoms (2), F-16 (3), and Hercules. Singaporean Black Knights acrobatic team (7); most of these have the lion-head roundel on the rear fuselage below the cheatline, although one has it just ahead of the air intake, with the letters RSAF beneath the wings and fuselage in what appears to be black. Spanish AV-8S and a TAV8S with a sharkmouth. Swedish Drakens. Danish F-16 with fin in blue stripes and a white bull(?) wearing a blue tie with a red spot in the center. Slovak MiG-29 in lowviz tiger stripes and a MiG-21 with an inscription on the fuselage in white PRESENTED TO THE RAF BENEVOLENT FUND, INTERNATIONAL AIR TATTOO BY THE SLOVAK AIR FORCE. Czech Su-25 with a sharkmouth, a red/white/blue fin, and a very small fin roundel. Czech Hinds. Israeli F-4E-2000, F-16. Skyhawk, KC-130 refuelling an E-2C, RATO Hercules takeoff, Apache, CH-53, MD-500, and Cobra helicopters, all with the yellow V markings; the Cobra also has a snake on the nose. Belgian Sea King. German Army CH-53 with white lower surfaces.

"Issue 3, November 1994. Slovak Su-25 (2) with an elaborate mural on the fin of a girl lying atop a Buffalo (How does she manage to avoid falling off?); according to the caption this was applied for an air show at Bratislava in August 1994 and was to last for only a week. Norwegian F-5 with a tiger-striped front fuselage. Belgian F-16A 'FA-119' with D-Day invasion stripes below the wings (Are these carried above the wings; they are not visible on the leading edge slats). Gripen Update (3). Hercules: South African anniversary aircraft (blue/white/orange fin stripes and titles on the fin and nose); silver Turkish C-130E; low-viz Canadian; Belgian anniversary aircraft; Greek; Chilean; Algerian; Kuwaiti; Nigerian; RAAF anniversary; Indonesian; Japanese; Malaysian C-130H-MP (overall light grey with tiny markings, square national insignia on the rear fuselage and under the starboard wing, with a title or serial under the port wing, fin flash, serial, TUDM title, and a pale grey bird emblem are all carried on the fin); Singapore (2) (high-viz C-130H in a white and medium grey scheme with a dark colored (black or dark blue?) cheatline, the red lion-head roundel

faces forward on the starboard side, this is applied directly on to the light grey lower fuselage, with no white, so the roundel appears to be red/grey/red; no roundels are visible beneath either wing; the title REPUBLIC OF SINGAPORE AIR FORCE appears on the forward fuselage between the cockpit windows and the propeller warning band around the fuselage; serial '735' appears on the fin, flanked by checkerboard band of medium green and light blue, below which is a black and yellow bird's head; the last two figures of the serial are repeated on the nose; low-viz KC-130B '720' wears a wrap-around USAF Vietnam-style camouflage of medium green, dark green, and tan; black only lion head roundel on the rear fuselage and below the starboard wing, with the background color showing through; the fin band is a low-viz version of black and the background color, in this case medium green; the serial and fullcolor bird's head remain as before; the fuselage title and 'last-two' on the nose are also the same. Luftwaffe Eurofighter 2000, MiG-29 (2), Su-22 (2), Tornado, C-160, ex-Egyptian Su-20 with no markings, Do-228, and Mi-24D. Spanish F-4C, RF-4C, F-18 (3), CL-215, Boeing 707, Falcon 20 and Falcon 50, both with the fuselage roundel on the rear mounted engine nacelle. Desert camouflaged Su-30 in red stars. Hawks painted up in the colors of the various customers for publicity, each carrying a national flag on the fin and the name of the country on the fuselage; most were all-black RAF aircraft, but the light-grey demonstrators were painted to represent Malaysia and Oman. Ukraine Su-27 with the shield on the fin and a dark-blue/yellow roundel on the air intake. Slovak MiG-29, Su-22, and MiG-21. Austrian Draken. Swiss Mirage, Hawk, F-5E, Hunters, Venom/Vampire, and PC-7.

"Issue 4, December 1994. Luftwaffe JBG-35 anniversary Phantom (2). Polish MiG-29 (2), MiG-23 (4), MiG-21 (2), Su-22 (4). An-26, Yak-40, Iskras, Iryda, Orlik, Mi-8 with a white and light-blue band around the tail boom, and a pair of Hinds. Dutch F-16B with a tiger and an anniversary title on the fin. Saudi C-130H in a new(?) desert camouflage of brown and stone with light grey undersurfaces; even the propeller spinners and blade cuffs are stone rather than black; the green/white fin flash is retained, but the rear fuselage roundel appears to be a low-viz version in a sandy color, as are the titles on the forward fuselage and the serial number, '473'. Spanish Army Chinook (2), Bo-105, OH-58, UH-1H, and Super Puma.

"Issue 5, January 1995. Omani Hawk Mk.203 in overall light grey with a blue and sand colored national shield on the fin. Japanese anniversary aircraft, 14 photos of aircraft and helicopters in some very gaudy colors, even a Hercules with a large yellow and white Pegasus(?) on the fin. NASA SR-71. Luftwaffe Tornado; USAF F-15 target tug with a target mounted under the fuselage. Canadian CF-18. Belgian F-16A. Spanish F-18. Five pages on the Greek Air Force with 9 photos: F-4E, RF-4E, F-5B, RF-5A, RF-84F, T-33, AB-205A, HU-16 Albatross, and C-47.

"Listed for Issue #6 is an article on the Republic of Singapore Air Force.

"Subscriptions are £ 30.00 for Britain, and £ 36.00 overseas surface mail, for one year/12 issues. Enterprise Aviation Publishing, 42 Claygate Road, London, W13 9XG, England, Great Britain. Back issues are available at £ 3.00 each in Britain, or £ 3.50 each overseas, including postage.

Paul Adams (SAFCH #773), 81 Ponsonby Road, Ponsonby, Auckland 1, New Zealand.

# LITTLE KNOWN AIR FORCES OF THE 1920s

## Part 6: Ukraine

Lennart Andersson

Several air forces existed in the Ukraine in 1918/1920. The Ukrainian People's Republic (UNR), formed in November 1917, and the West Ukrainian People's Republic (ZUNR), formed in November 1918, were formally united in February 1919, although the ZUNR continued to exist until November 1919.

The UNR possessed air units already in December 1917, when V Yu Baranov was appointed head of Ukrainian aviation. Several exImperial Russian Air Force squadrons were taken over, some complete with aircraft, equipment and personnel. The inventory probably included such types as the Nieuport 17, 21 and 23 fighters, and two-seaters like the Sopwith 1 1/2 Strutter, Voisin, Farman F 30, Anatra Anasal, Albatros and Brandenburg. A single Sopwith 2A2 was delivered from French sources at the beginning of 1918. New units formed included the 1st Ukrainian Fighter Flight (otryad) and the 1st Ukrainian Army Aviation Flight. The air force was known as the Povitrovii Fl'ot (Air Fleet).

During the German occupation of the Ukraine in 1918 the puppet government of Hetman Pavel Skoropadsky, which was established after a coup in April 1918, had an army with air squadrons (aviadiviziony) at Khar'kov, Poltava and Ekaterinoslav and an aviation depot (aviapark) at Khar'kov. At the end of September 1918 a Ukrainian national insignia, consisting of a black trident, was introduced. It was to be painted only on the wings and the order introducing it stated that old aircraft with the red, blue and white Imperial Russian roundels could retain those markings for the time being. The aircraft inventory included Caudron G 4, Nieuport 9, 10, 11, 17, 21, 22 and 23, Morane Parasol and Monocoque, Maurice Farman, Farman F 30, Spad, Voisin, Dekan, Brandenburg, Albatros, Rumpler and Sopwith aircraft. Skoropadsky's government collapsed when the Germans withdrew, and in December 1918 S V Petlyura became the new Ukrainian leader.

The so-called Ukrainian Galician Army of the ZUNR formed an air unit commanded by Petr Franko in November 1918. This squadron had about twenty Nieuport, Albatros, Farman and "Daimler" aircraft and participated in the fighting against Polish troops. Two new flights (otryady) were formed in the autumn of 1919.

The UNR air force was strengthened early in 1919 when aircraft were supplied from Austria. One batch of about thirty aircraft reportedly included a Lohner, a Gotha, four Capronis, some LVG C.VIs, SVA aircraft with 220 hp engines and Phoenix aircraft with 200 hp Hiero engines. A few Voisins were also in service and flying schools were operated at Kamentsa, Proskurov and Vinnitsa. A Ukrainian Nieuport fighter was shot down by a Polish aircraft on 29 April 1919 and a Nieuport 17C1 defected to Czechoslovakia in the same year. The Ukraine declared war on Soviet Russia in January 1919 and was attacked by Poland in June. At the end of 1919 only a few aircraft remained in the hands of the air force of the UNR, probably LVG, Brandenburg and Albatros types.

Three four-engined German Staaken R.XIVs registered D.129, D.130 and D.131 were chartered by the Ukrainian

Government in the summer of 1919 to carry recently printed Ukrainian bank notes from Berlin to Kiev. Only one reached the Ukraine, but was later interned in Austria on 29 July. One was shot down and crashed before reaching its destination on 4 August 1919, and the third was interned in Rumania on 19 September. Friedrichshafen transports were used for this purpose later and sporadic flights continued until November 1919.

At the end of 1919 or beginning of 1920 a Ukrainian Gotha GL.VII bomber named 'Olena', that was flown by a German pilot, was interned by the Czechoslovakian authorities when making an emergency landing near Bratislava (See SAFO # 24).

In December 1919 Petlyura asked Poland for help to free the Ukraine from the Red Army and an agreement between them was signed on 23 April 1920. For this operation Petlyura set up a new Ukrainian air force and the Poles turned over a few aircraft including some Albatros fighters. A large number of two-seater 22() hp Ansaldo SVA aircraft were ordered from Italy, probably of the SVA 9 or SVA 10 model, but including at least one SVA S I. In April 1920 an SVA 9 was flown from Turin to Vienna and Kiev, but was quickly returned to Vienna. The rest of the aircraft were never delivered. An offensive by Poland and Petlyura's forces into the Ukraine started on 25 April. Kiev was captured on 7 May but had to be evacuated again on 10 June. Petlyura's forces were defeated by the Red Army after a few weeks and most of the Ukrainian air force probably disintegrated when the Ukraine was occupied by the Red Army and Petlyura fled to Poland at the end of 1919.

The Don Cossacks under General P N Krasnov (the army of the Don Republic) also had a few aircraft in 1918.

A Red Ukrainian Air Fleet headed by N Vasiliev was established at Kiev in February 1919, but was formed in Russia and was to all intents and purposes directed from Moscow. It was formally incorporated into the Red Russian Air Force (RKKVF) in May 1919.

Qty	Date	Type	Notes
(6)	1918	Voisin	Don Cossack squadron
	1918	Nieuport 17	Don cossack squadron
	1918	Nieuport	ZUNR
	1918	Farman	ZUNR
	1918	Albatros	ZUNR
	1918	"Daimler"	ZUNR
4	1918	Voisin	c/ns 624, 730, 737, 745
2	1918	Morane monocoque	c/ns 755, 952
3	1918	Morane Parasol	c/n 413/252, 629, 908
1	1918	Maurice Farman	c/n 5407
6	1918	Farman F30	c/ns 1253, 1424, 1624, 1674, 1686
1	1918	Caudron G 4	
1	1918	Nieuport 9	c/n 1046
1	1918	Nieuport 10	c/n 725
1	1918	Nieuport 11	c/n 1057
1	1918	Nieuport 17	c/n 1437
2	1918	Nieuport 21	c/ns 380, 1317
1	1918	Nieuport 22	c/n 1285
7	1918	Nieuport 23	c/ns 3224, 3226, 3240, 3241, 3246, 3247, 3731
2	1918	Spad	c/n 1516
1	1918	Sopwith 2A2	c/n 1136
	1918	Anatra DS Anasal*	
	1918	Anatra D/Dekan	c/ns 480, 801

1	1918	Albatros	c/n 24
2	1918	Rumpler	
3	1918	Brandenburg	c/ns 63154, 67156
some	1919	Phoenix	200 hp Hiero
	1919	Lohner	
4	1919	Caproni	
some	1919	LVG C.VI	
	1919	Gotha GL.VII	'Olena'
some	1919	SVA	220 hp
1	1920	Ansaldo SVA S.1	
	1920	Ansaldo (incl SVA 9)	'Large number', not delivered

few 1920 Albatros D  
5 (8.20) LVG C. Destroyed in Germany by the Allies before delivery

\* Not confirmed  
Main source: AeroKhobbi, Kiev, Ukrainian aviation magazine.

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## UKRAINIAN MILITARY AVIATION SINCE 1918

Igor Gordelianow

### The First Ukrainian Air Regiment

The First Ukrainian Air unit was founded in Western Ukraine by the Ukrainian Government (named "Getmanat and Directioija") in December 1918. The regiment was composed of three groups ("Sotnya") plus a workshop with depot. Total number of aircraft in the Regiment was 40 aircraft:

I Sotnya had 6 airplanes and was stationed at Dumba near Strij in the region of Lvov. This group operated over the frontlines. The commander was Captain Hrusch.

II Sotnya had 12 airplanes and was stationed at Krasne also near Lvov. This group operated with the I and II Ground Corps on the Polish frontlines. The commander of the group was Colonel Kanyukow.

III Sotnya had 22 airplanes and was also stationed at Krasne and was also commanded by Colonel Kanyukow.

The Commander of the Regiment was Colonel Guber (pilot and ace) until his death after which Colonel Kanyukow took over.

The aircraft in the Regiment were: 16 Hansa Brandenburg (from Germany), 12 Nieuports of different versions (from France); 6 Fokkers (from the Netherlands), and 6 other of unknown type.

The First Air Regiment saw action against Poland, performing reconnaissance duties, bombing attacks, and engaging in combat with Polish fighters. Ukrainian pilots destroyed 16 Polish aircraft in the air. When the western Ukraine was integrated into Polish territory, the Air Regiment was flown the Kiev (which became part of the Soviet Union in 1922).

### The 14th Air Army

The First Ukrainian Air Regiment was reorganized and renamed the 14th Air Army. In 1942, it was assigned to the Forces of the Volkow Front. The units of the 14th Air Army were: 278 & 179 Fighter Squadrons (I-16 & Jak-1); 280 Bomber Squadron (Pe-2 & Su-2); 281 Attack Squadron (Il-2); and a separate unit for reconnaissance and special duties (Po-2 & UT-1).

During WWII, the 14th Air Army was commanded by Major General Ivan Szurawlew and distinguished itself in actions over Tihvin (near Moscow), Leningrad, Nowgorod, Pskow, and Riga. During the war the 14th Air Army flew more

than 74,000 combat sorties, destroying 1,323 enemy aircraft, 398 German tanks, and 10,000 German armored cars. Among the most heroic actions were those of 19 pilots who, out of ammunition, brought down enemy aircraft by collision. Another 10 pilots crashed their aircraft into enemy ground targets. The most outstanding feat of this nature was by Lieutenant Nikolaj Liskonozhenko who destroyed two German fighters, both by collision, in one flight.

During the Great Patriotic War, the 14th Air Army had 82 Heroes of the Soviet Union and 8255 pilots, ground personnel, and staff members were decorated by the Government of the Soviet Union.

After the war, the Regiment was assigned to the Prikarpatye Military District (with headquarters at Lvov). New aircraft which began to arrive in 1949 included MiG-9, MiG-15, MiG-17, Il-28, Il-12, and Il-14. Between 1950 and 1970 the Regiment received MiG-19, MiG-21m Su-7B, Jak-28.

In 1986, the disaster at the Chernobyl Nuclear Power Station brought the helicopters of the 14th Air Army into action. Their Mil Mi-8 and Mi-17 made 1550 flights into the radioactive zone with a total flight time of 1600 hours. Among the pilots flying these missions were Colonel L Kim, Major V. Yurikow, and Captains I. Gurulyow and L. Malik.

In 1990, a great storm brought rains and hurricane-force winds to the Western Ukraine. Many villages were flooded or destroyed by tornadoes. More than 2000 people were rescued and more than 30,000 tons of harvest and produce was saved by the helicopters of the 14th Air Army.

### Independent Ukraine

At the present time (December 1993), 14th Air Army is one of the most important units of the Army of the new Ukraine which became independent in 1991. The Air Army has many Air Regiments which are stationed in 10 regions. Aircraft in service are: MiG-23, MiG-25, MiG-29, Su-24, MiG-21, Su-25, Mi-17, Mi-24E, Su-24, and Mi-26.

In August 1992, the First Ukrainian Airshow was held with all the aircraft of the newly-independent country on display.

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# AIR WAR OVER GEORGIA

Dmitry Shevchuk

The Caucasus have historically been an extremely volatile area, and the collapse of the USSR has again brought this area to the world's attention. Georgia, for example, has experienced three separate armed conflicts in the short time since it regained independence.

The first conflict occurred in South Osetia, a part of Georgia inhabited by ethnic Osetins. While the USSR existed, about half the Osetins lived in North Osetia which was administered by Russia, while the other half lived in South Osetia which was administered by the Republic of Georgia. When Georgia began striving for secession from the USSR, the 'Southerners' objected to the idea of living in an independent Georgia. On 20 September 1990, South Osetia proclaimed its independence from Georgia.

Obviously, the Georgians did not take kindly to this idea and, on the night of 5 January 1991, the Georgian police and volunteer forces assaulted Tskhinvali, the capital of South Osetia. As the fighting escalated, the Soviet Army remained neutral while trying to help civilians by preventing murder and starvation.

Georgian Air Force helicopters entered into the hostilities, but they had a minor effect on the fighting. These helicopters had been received by agreement between the Georgian officials and the Soviet Army high command.

A Soviet Army helicopter regiment, deployed near Tskhinvali, was equipped with Mi-24 and several Mi-8/17. This regiment had been recently withdrawn from Afghanistan and was still manned by combat-experienced crews. The regiment's base was occasionally shot at by heavy weapons, as also happened to other Soviet garrisons, and helicopters (usually 2 to 4 Mi24s) responded with devastating attacks on the Georgian artillery and armored vehicles, forcing them to cease fire. Unfortunately, no details of aircraft activities in this conflict are available.

Ultimately, the war came to a halt when the government in Georgia changed. A short civil war in Tbilisi (the capital of Georgia) and in Western Georgia resulted in eviction of Zviad Gamsakhurdia, the democratically-elected president of Georgia who had however, set up a dictatorship. The opposition was supported by the National Guard Force, but the Air Force did not participate in the coup.

The new president, exCommunist leader of Georgia and the Soviet exForeign Minister Eduard Shevardnadze, immediately put an end to the Georgian-Osetian war but started another one against Abkhazia. The scenario is familiar. Abkhazia, the northern coastal part of Georgia, demanded more and more independence until, on 14 August 1992, Georgian troops (Army, National Guard, and "Mkhedrioni" volunteers) occupied the entire Abkhazia in one rapid assault. Some days later, however, the Abkhazians regrouped and counterattacked. The famous Black Sea resorts came to resembled a hell of fire. The report of the first air combat activities emerged in press in those days. An unidentified light aircraft (most probably a sport airplane) dropped a self-made bomb on the airport at Sukhumi (capital of Abkhazia) airport, which was occupied by Georgians at this time. A couple of men on the ground were injured. No more information is known about this "ersatzbomber". In another incident, helicopters attack a small civil ship which was evacuating tourists and refugees (mostly Russian) to Russia killing one man and injuring two others. Radio interception revealed that

the pilots were Georgians.

By October 1992, the Abkhazian army was preparing for an offensive against the strategic coastal town of Gagra. This preparation was not missed by Georgian reconnaissance, and, on 2 October at 0900 hours, Georgian Su-25 (which were assembled at the Tbilisi aircraft factory) approached from the sea at a low altitude and dropped bombs on the suburbs of Gagra. There were some casualties among civilians, but these sortie did not prevent the Abkhazian forces from accomplishing all their assigned tasks. In the Gagra battle, the Georgian side lost one Mi-24 helicopter which had attempted to attack Abkhazian forces, but was shot down by a surface-to-air missile and fell into the Black Sea. Georgians blamed this loss on the Russians, but this is not true.

However, Russia was drawn into the conflict. There existed, in Abkhazia, several Russian military units, some in Georgian-occupied territory (an Airborne Battalion in Sukhumi) and some in the area controlled by Abkhazians (a large air base near the town of Gudauta and a seismic laboratory in the village of Nizhnie Eshery, defended by No.901 Airborne Battalion). On the whole, Russian troops tried to keep neutral and provide aid to the civilians in the besieged Abkhazian towns.

For example, on 27 October 1992, two Russian Mi-8 helicopters, escorted by two Su-25, were delivering humanitarian aid to the town of Tkvarcheli when two Georgian Su-25 attacked. The air combat that ensued, involving the same type of aircraft, ended in no damages to either side.

Gradually, the Abkhazian troops pushed the Georgians back to Sukhumi. Although Georgia possessed, on paper, a much stronger military force, their effectiveness was reduced by the existence of three independent "armies": the National Guard, the "Mhedrioni" volunteers, and the regular troops which all acted on their own without a common supreme command. An example of the lack of coordination is an attack, on 3 November, on the village of Shroma, close to Sukhumi, during which Georgian helicopters attacked their own troops, killing 15 Georgian soldiers.

Trying to blame their defeats on "objective reasons", the Georgians accused the Russians of "aggression against Georgian military units", and attacked Russian garrisons in the Abkhazian-controlled territory. For example, on the night of 4 November, two Su-25 and two escorting Su-27 from Gudauta air base, attempted to destroy a Russian BM-21 artillery system. In another case, on 18 November, Georgian artillery fire caused the death of one Russian officer and injuries to two soldiers. In retaliation, a Russian Su-25 attacked the Georgian artillery which were located near some house. (The placement of combat unit within civilian areas was a tactic widely used by both sides, so that the enemy could be blamed for "barbaric elimination of civilians" in case of counter-battery fire.

In December 1992, a Russian Mi8, tactical number '03', was shot down (pilot Sergey Evdokimov). This helicopter and its crew were well known to the paratroopers, for it had been used to deliver food supplies to the Russian garrison in Sukhumi when it was occupied by the Georgians. Georgians claimed that the helicopter was transporting Abkhazian guerrillas and weapons. But, Russian experts, guarded by a Russian paratroop battalion, who arrived at the scene of the crash, some 20 km from the

blockaded Abkhazian town of Tkvarcheli found only the personal arms of the crew the wreck, together with the bodies of 13 women and 45 children. Then, the Georgians claimed that the helicopter had crashed because it was overloaded. However, it was clear from the evidence that the helicopter had been shot down; the blades of the right engine were found damaged by fragments of a missile. Relief flights were resumed with an escort of combat Mi-24s and a rescue helicopter.

Later, the Abkhazians confirmed that Major O. Chamba was reported missing from a combat flight. From where the Abkhazians received their Su25s was never mentioned, but the only available source was the Russian Air Force. Perhaps, in response to provocative actions of Georgia, Russian military chiefs had given or sold several Su-25s to Abkhazian pilots who served in Russian Air Force. It could have been these pilots who organized Abkhazian aviation.

The next incident occurred on 18 January 1993, and again it was precipitated by the delivery of the humanitarian aid to Tkvarcheli. A Georgian anti-aircraft unit, commanded by Shangeliya (Afghan war veteran), shot down a Russian AF helicopter. Shangeliya praised the captain of the Russian crew, Anatoli Melnik, for his skillful forced landing. Melnik, by the way, had also fought in Afghanistan and his combat experience was the only factor that prevented casualties.

On 6 February, while attacking the Abkhazian positions, a Georgian Su-25 was shot down. Its pilot, Nodar Nodareishvili, successfully used his ejection seat and was taken POW. The Georgian side claimed the Su-25 was shot down by a Russian fighter plane, while the Abkhazians and Russians credited the score to the Abkhazian air defence. The following day, four Georgian Su-25 tried to drop bombs on the seismic laboratory at Nizhnie Eshery; fierce resistance forced them to drop their bombs into the sea. On 20 February, the long-suffering Russian paratroop battalion was exposed to bombs of a Russian Su-25 which dropped the bombs intended for a Georgian artillery unit some 30 meters from the troopers position.

On 20 February and 16 March, unidentified Su-25s assaulted residence blocks of Sukhumi occupied by Georgians. The responsibility for these attacks was claimed by the Abkhazian side.

All in all, from 13 to 18 March, the Georgian AF made 14 air raids against Russian targets in the Abkhazian-controlled zone. In the raid of 17 March (four Su-25s participating) against the military health center, five people were killed and 15 more injured. The Russian Defence Minister said, "According to our reliable data filed by reconnaissance, the Georgian AF disposes of 7 Su25 airplanes which were assembled at Tbilisi aircraft factory, bear Russian AF camouflage and red stars, being similar to our aircraft, and regularly participate in bombing raids from Kapitnari airfield." [Author's comment: From this, we see that Su-25s on all sides apparently carried red stars. There is a video, however, taken on the air base in Gudauta that shows a Russian AF Su-25 with a double-headed Russian eagle and a big Russian flag on the fin. Could this be a local modification?] [Editor's note: Photographs in Zlinek show Russian Navy Su-25 with these latter markings.]

On 19 March, at 0300 hours, Georgian AF aircraft were noticed close to Russian troops. To prevent a possible bomb attack, a Su-27 took off with 1st class pilot Major Vatslav Shipko at the controls. The fighter was patrolling over the Russian troops, when, at 0427 hours, radio communication with the plane

was lost. Witnesses reported an explosion in the sky and falling wreckage. Georgian military radio communications were intercepted in which they reported the successful engagement of a target and the crash of an aircraft north of Sukhumi. The airplane was shot down by an anti-aircraft missile S-75 (SAM-2), units of which were located around Sukhumi. Three of these systems were officially handed over to Georgia in 1992 and two more were captured. Such units were easily obtained by semi-gangster "national armies" from Soviet Army Air Defense units which were weakened by deserters, lack of recruits, treason on the part of soldiers and officers mostly of the local ethnic origin, and the Soviet command's impotence. For instance, in December 1992, the Shavnabad commando (spetsnaz) battalion of the Georgian Army surrounded and stormed No.7 Unit of 144 Missile Brigade, capturing 16 anti-aircraft missiles S-125 (SAM-3) and two launchers for them. These were supposed to be sold to the Karabakh Armenians, but the further destiny of these arms is unknown and it is quite possible they remained in Georgia.

On 26 April 1993, at 1725 hours, a Georgian Su-25 approached Gudauta from the sea at the lowest possible altitude and launched an S-8 unguided missile and dropped four 250-kg bombs. As a result, 12 houses were destroyed, one woman killed and 12 people injured, including one Russian Army officer and six children.

On 1 May, Abkhazians, using a portable anti-aircraft missile, shot down a Georgian Su-25. On 27 May, a captured Georgian pilot, most probably Nodar Nodareishvili, was exchanged for a Russian officer kidnapped by Georgian intelligence service. The next day, a Russian Mi-6 helicopter, which was delivering humanitarian aid, was shot down. The helicopter was destroyed by a surface-to-air missile and all five members of the crew were killed. On 6 July 1993, a Georgian anti-aircraft unit erroneously destroyed one of its own Su-25. On 13 July, another S-25 was shot down by Abkhazians.

On 21 July 1993, an infrared guided missile was shot from an Abkhazian boat two miles from the coast. The missile hit a civilian Tu-154, belonging to Georgia, which was evacuating refugees, injured military, and soldiers being withdrawn for rest. Though one engine was destroyed, the pilot managed to land the aircraft at Sukhumi airport.

On 27 July, with Russia's active mediation, the hostilities stopped. After that, Georgian Su-25s made only reconnaissance sorties and the gradual withdrawal of troops and heavy vehicles from the front line started.

The truce settled down in Abkhazia, but in Georgia a dangerous incident happened between the Russian and Georgian armies. On 11 August, 25 km from Tbilisi, a Georgian battalion blocked a Russian motor column, consisting of 124 trucks, 65 refuelling trucks, and 62 security servicemen. The obvious intent was to rob it. Only the arrival of three armored vehicles, two Mi24s, and one Mi-8 discouraged the Georgians.

On 17 September, a Russian AF Su-25 was lost during a flight over Abkhazia; the reason for the crash is unknown.

Exploiting the withdrawal of some Georgian units from Abkhazia and the beginning of an antigovernment movement in support of the former Georgian president Zviad Gamsakhurdia, the Abkhazian forces started a powerful offensive to liberate Sukhumi, the capital of the country. The battle for Sukhumi lasted from 20 to 28 September. These days became a nightmare for Georgian aviation. On 21 September, at 1625 hours, while



approaching the Sukhumi airport, a Georgian Tu-134 was shot down and fell into the sea; all 28 persons on board were killed. The aircraft was destroyed by a portable anti-aircraft missile launched from the Abkhazian boat.

On 22 September, a Tu-154 attempting to land at Sukhumi was damaged by a missile from a boat; the pilot managed a forced landing, but 80 of 100 soldiers on board died in the resulting fire.

On 23 September, a civil Tu-134 was destroyed by an artillery shell while refugees were being taken on board. On the same day, the Abkhazian air defense shot down two Georgian Su25 which were attacking Abkhazian positions in Sukhumi. On 24 September, the Georgian side acknowledged the sortie of an Su-25 at 0700 hours aimed at destroying an Abkhazian boat near Sukhumi. Soon after the take-off, the plane was shot down.

The next day, a Tu134 made a successful flight to Sukhumi with a group of Georgian military on board. This, however, could not prevent the total rout of the Second Army Corps of Georgia. By 28 September, the city had been fully occupied by Abkhazians, and Shevardnadze, who was personally controlling the defence of the city, left on a Tu134, (other reports suggest a Yak-40) full of injured. The aircraft experienced some minor damage from anti-aircraft fire, but made a safe trip home.

In the course of Sukhumi battle, the Russian Black Sea Navy (Chernomorski Flot) was evacuating civilians from Sukhumi,

mostly Georgians, with some Georgian soldiers in despair joining them. When taking the people away, an unknown, perhaps Abkhazian, helicopter attacked the landing barge.

By 1 October, the Abkhazian troops had recovered all of Abkhazia and had reached the Georgian border. The disastrous defeat of the Georgian army led to a mass exodus of ethnic Georgians from Abkhazia, amounting to 120,000 refugees. The Georgian "Aeroflot" (exUSSR civil airlines company) Mi-8s were also involved in evacuation, making sorties every hour. Later on, two military Mi-8s of the Russian AF, 17 Ukrainian AF Mi-8s, and Armenian helicopters joined in the evacuation.

The losses on both sides in the Abkhazian war, though possibly incomplete, look like this:

#### Georgia:

7 Su-25s, one Mi-24, 2 Tu-134s, 2 Tu-154s (It is possible that more civilian machines were destroyed or captured by Abkhazians.)

#### Abkhazia:

One Su-25

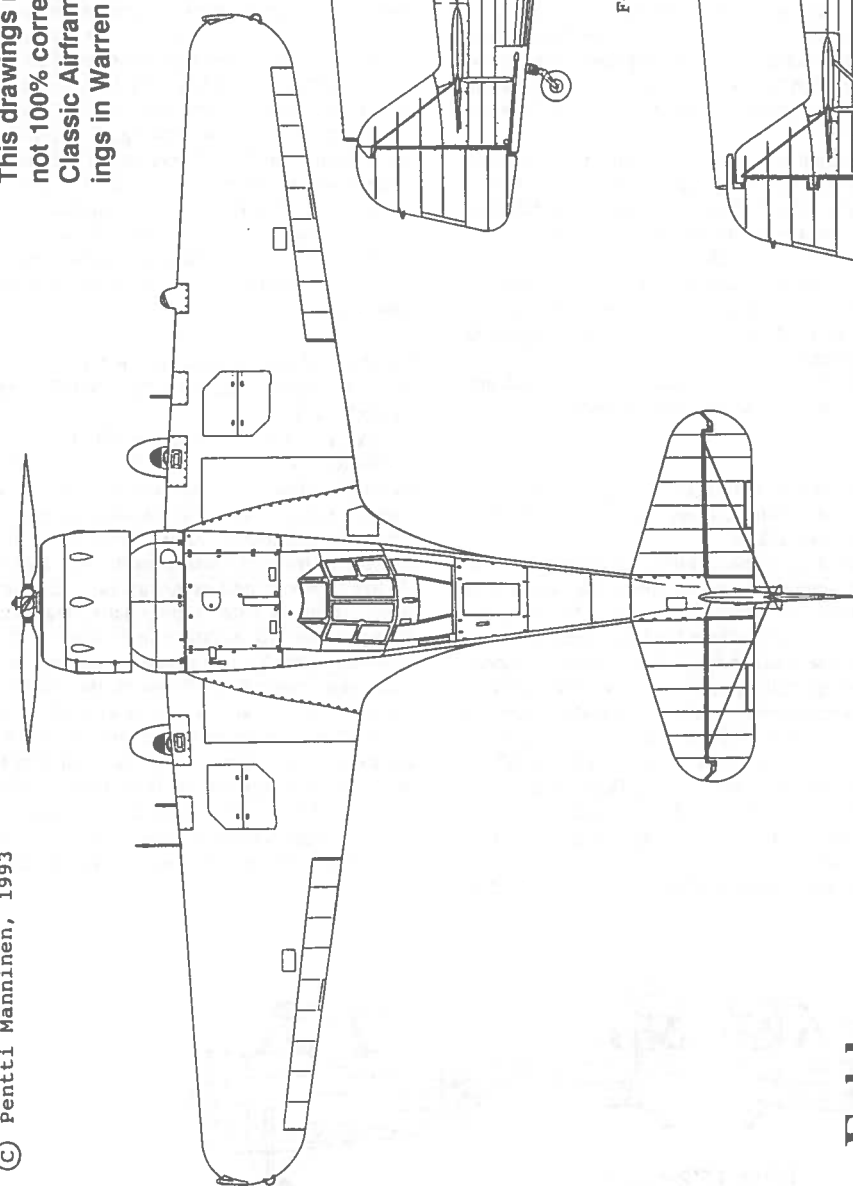
#### Russia:

One Su-25, one Su-27, one Mi-6, 2 Mi-8s

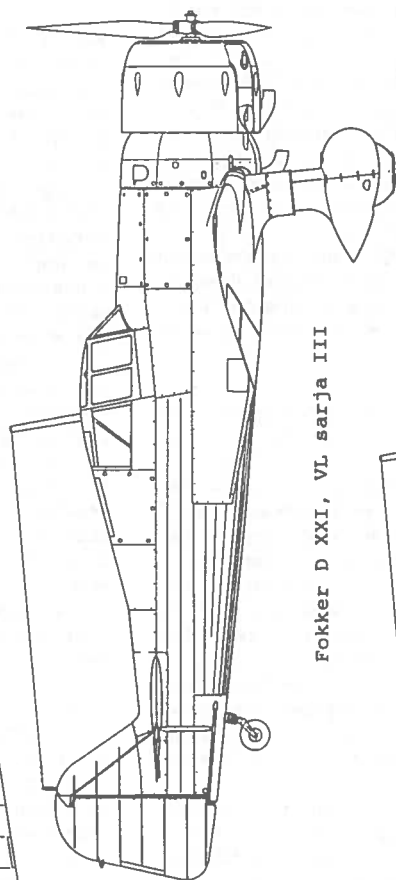
In early November, the Georgian Ministry of Defense reported that four helicopters delivered 100 volunteers from "The Caucasian Nations Confederation" to help the rebels. The helicopters came, most probably, from Chechnya, an area which

Dmitry Shevchuk (SAFCH #1308), Kosmonautikas 13-68,  
LV-1080 Riga, Latvia.

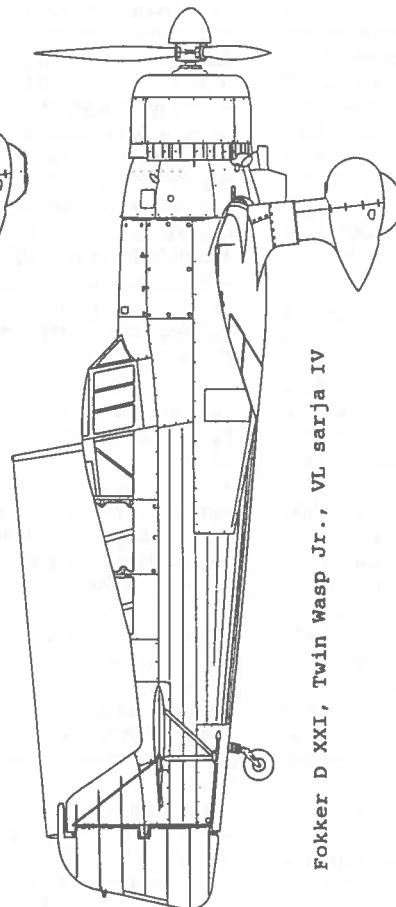
This drawings is derived from manufacturer's documents. This is not 100% correct , no drawing is, but it is close. Compare with the Classic Airframes kit (see review on page 56) and with the drawings in Warren Eberspacher's book on the D.XXI. Pentti Manninen



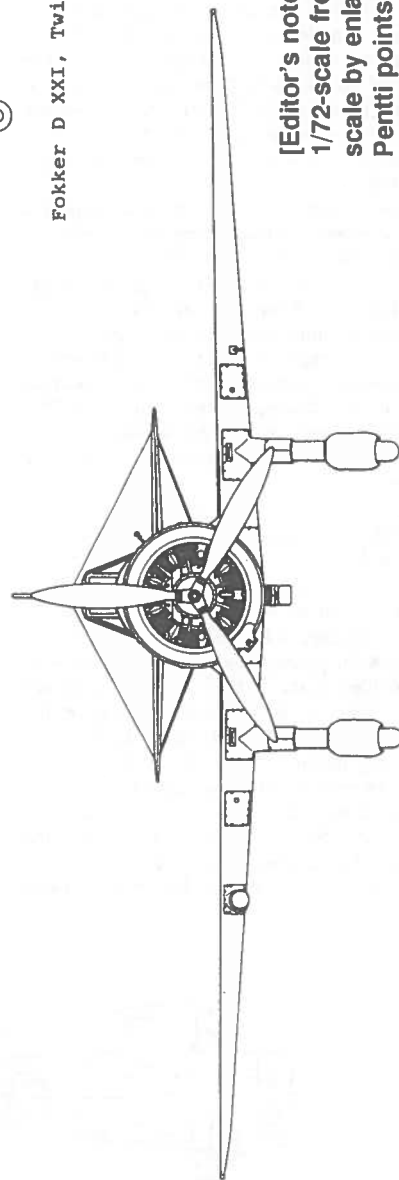
## Fokker D.XXI



Fokker D.XXI, VL sarja III



Fokker D.XXI, Twin Wasp Jr., VL sarja IV



[Editor's note: To save space, this drawing has been reduced to 1/72-scale from the original 1/48 scale. You can return it to 1/48-scale by enlarging by 150%. Some distortion will result, but, as Pentti points out, the original he sent were already 2 mm too long on the right side "due to Xerox copying".]



aircraft with colors identified in English with Humbrol equivalents indicated. There is a problem, however, with the two decal sheets; they do not provide the required markings. They seem to have been produced for other kits (one sheet for a 1/72 P-40, the other for an unidentified Soviet aircraft). This may be a mistake in packaging, but I don't think so. I think they were meant to provide the red stars and the modeler is expected to find the codes and naval ensign in his spare box.

This is a good kit, except for the decals, and with a little work can be made into an attractive model.

**Nakajima E8N Dave**, 1/72-scale, injection-molded kit. Aviation Usk, 602 Front St., Box 97, Usk, WA 99180, USA. \$17.95 plus \$3.50 postage.

A kit of the Dave has been long awaited. While here it is, and its another great kit from the people at USK. Nicely molded on several sprues of light-grey plastic with just a hint of flash are some 50 parts with appropriately subdressed surface detail. Interior is minimal with floorboards, seats, control stick, and instrument panel. Most small details are well molded, but the engine, propeller, and the cabine, wing, & float struts will need a little cleaning up. The two windscreens are molded on a small sheet of clear plastic. The engineering of the kit is traditional for limited-run kits of biplanes, and construction is made all the more tedious by the requirement to align not only the wings, but also the central and wing-tip floats. [Editor's note: If you have a direct line to the patron saint of modeling, tell him to talk Monogram into releasing more kit in their extraordinarily well-engineered biplane series of the 1970s.]

The instruction sheet provided the usual exploded construction views and well-referenced drawings of 4 aircraft (one silver overall with a red tail, the others in the standard brown/green upper camouflage with light grey undersurfaces. The decal sheet is comprehensive and well printed.

The color painting on the box top is very attractive. USK has what is without a doubt the best looking box art in the industry, and that includes the "big boys". This is a great kit, but the words on the box top say it all: "Recommended for experience modelers".

**PWS-16bis**, 1/72-scale, injection-molded kit. RPM Poland. \$8.00.

Not everybody will be familiar with the PWS-16bis, but it is a very attractive biplane trainer from the 1930s with distinctive Polish lines. Molded on two sprues or white plastic are some 40 flash-free, delicately-molded parts. Surface detail is generally good, particularly the rocker-arm covers on the engine cowling. However, the fabric detail on the rudder and fuselage is over done (this problem seems to be endemic in Polish-made kits) and will need filing down. The simulation of the ribs on the wings is better, but could still stand a touch of the sandpaper. The engine cylinder heads are not well done, but they will be barely visible on the finished

model. A small sprue of clear plastic contains the windscreens (too thick) and instrument panels. The instruction sheet provides construction diagrams and drawings for three aircraft: two civilian aircraft, SP-BGC and SP-BCX, is a overall silver scheme, and a Polish AF aircraft, 59-30, in an overall khaki scheme. The decal sheet provides all the necessary national insignia, registration letters, and the PWS logo. These decals are well printed and the even aircraft specifications on the rudder (French style) are decipherable.

The RPM kit of the PWS-16bis is an excellent kit that will make an attractive addition to the collection of any modeler who is not afraid to tackle biplanes. I am looking forward to RPM's kit of the PWS 26.

**Su-22M4 Fitter K**, 1/72-scale, injection-molded kit. Pantera, ul. Sw. Marcin 61, 61-806 Poznan, Poland. \$12.00.

The first two kits (see Fitter G) from a new company in Poland are up to world standards in every way including presentation. Exquisitely molded on two sprues of light-grey plastic, the parts are absolutely flash free with fine engraved surface detail. Construction is straight forward except for the swing-wings which are designed to operate in unison. How well this works in practice remains to be seen. The canopy is thin and clear. The underwing stores supplied include drop tanks, two kinds of missiles, and bombs. The instruction sheet is very good and identifies the interior colors by Humbrol numbers.

The outstanding aspect of this kit is the decal sheet which provides markings for 5 aircraft from 4 countries: (1) Poland - red '3101' of 8 Pulk Lotnictwa Mysliwsko-Bombowego (Bison insignia); (2) Poland - yellow '3812' of 7 Pulk Lotnictwa M-B (Winged-Hussar insignia and bomb-carrying fox personal insignia); (3) Iraq; (4) Afghanistan - red '804'; and (5) East German - red '700' of Jagdbomberfliegerschwader 77.

This is a kit that it is impossible to fault. And, how many models of Afghanistani aircraft do you have in your collection?

**Su-22UM-2K Fitter G**, 1/72-scale, injection-molded kit. Pantera, ul. Sw. Marcin 61, 61-806 Poznan, Poland. \$12.00.

This kit of the two-seat Fitter has been engineered so it is identical to the kit of the single-seat version (see above) except for the shorter ventral spine that exposed the second seat (and, of course, the addition of a second canopy). Therefore, it is unnecessary to repeat the praise for the quality of this kit. Decals again are outstanding, providing markings for 5 aircraft from 4 countries: (1) Poland - red '507' of 40 Pulk Loynictwa M-B; (2) Poland - red '509' of 6 Pulk Lotnictwa M-B (Flying Tiger insignia); (3) Ukraine - red '52'; (4) Russia - yellow '27' with Shark Mouth and Russian flag; and (5) Slovakia - yellow '40'.

There's no indication of what kits Pantera will do

next, but what ever it is, I want one.

**Valmet Vihuri II**, 1/72-scale, vacuform kit w/ cast-metal parts. SL 72-002. KA-OK/Fin Scale, Tapio Huttunen, Haukantie 22, 45740 Kuusankoski, Finland. \$20.00.

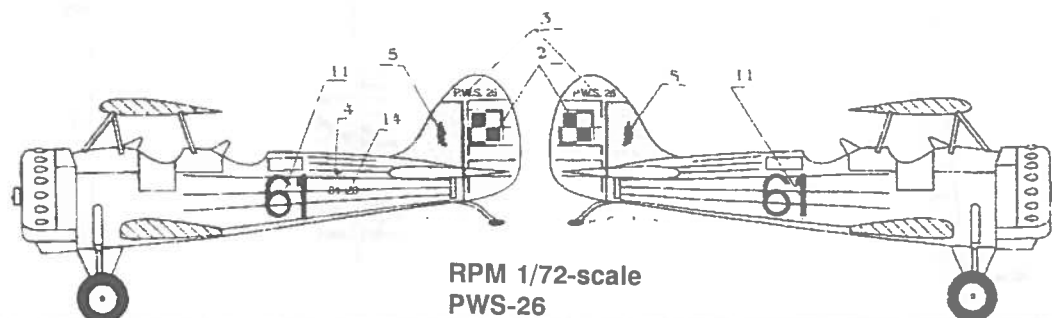
Our friend Tapio has released his second kit under the KS-OK hallmark. The Valmet Vihuri II is a Finnish-designed trainer which was in use from 1951. The kit is molded on one sheet of very thick white styrene with delicately inscribed panel lines and inspection panels, in-scale rivets, and an accurate depiction of the fabric on the moving control surfaces. Unfortunately, there are lots of vacuform pips which will have to be carefully removed so as not to damage the delicate surface detail. A bag of cast white-metal parts include the engine, propeller, spinner, main wheels, two-part undercarriage legs, and tail wheel assembly. These parts are little gems; scale thickness and absolutely flash free. These parts are better than anything I've seen, anywhere. The hugh canopy is vacuformed and very clear, so even the most timid of modelers will have to add detail to the interior which will be quite visible under this fish bowl of a canopy. The instruction are quite adequate and include a couple of hints on how to get sharp training edges and wing tips with such thick plastic. There are no decals.

A good reference source for the Vihuri II is Soumen Ilmavoimien Lentokoneet 1939-72, by Kalevi Keslinen. This has 5 photos of bare metal Vihuri, a 1/72-scale drawings of VH-30 in bare metal, and a side-view drawing of VH-20 green overall with the "crow" insignia on the fin. This insignia is available, if I am not mistaken, on several of the after-market decals for Finish aircraft.

The KA-OK kit of the Valmet Vihuri II is an excellent kit that would make a very good choice for the first vacuform kit for an otherwise-experienced modeler.

**VL Pyry**, 1/72-scale, resin kit. KA-OK/Fin scale, Tapio Huttunen, Haukantie 22, 45740 Kuusankoski, Finland. \$20.00.

Tapio's first kit, the vacuform VL Pyry, is now available as a resin kit. This kit is well cast with delicate surface detail and not a bubble in sight except on one wheel. The vacuformed canopy is clear with well defined frames. There are no decals, but the instruction sheet consists of a 1/72-scale 3-view drawing and some useful construction notes. [Editor's note: Tapio's letter that accompanied these kits is rather interesting: "KA-OK newest kit is the Valmet Vihuri II vacuform kit with white metal parts. KA-OK first kit, the vacuformed VL Pyry, is now also available with white metal parts. These kits are manufactured in Russia, but are for sale only from Finland. The resin Pyry kit is made by my Czech friend. Both Pyry kits will be available. All KA-OK kits are 20 USD each, which is just enough to cover my cost. If anyone is interested in Finnish aircraft, you have my address."



RPM 1/72-scale  
PWS-26

**Sukhoi Su-27 Flanker B, 1/48-scale decals. Cutting Edge, PO Box 3956, Merrifield, VA 22116, USA. \$7.00.**

Dave Klaus (SAFCH #891) of Meteor Productions has released a limited-run decal sheet for the Academy 1/48 Su-27 Flanker. This 13.5 cm by 20 cm sheet provides markings for 8 a/c: 5 Russian (red '09' with a Saint-George-Slaying-the-Dragon unit insignia, red '10' with shark mouth, blue '24', blue '12', and a red/white/blue painted a/c of the Test Pilot School with the Russian flag on the tail); 2 Ukrainian (red '28' with trident insignia on tail and yellow/blue roundels on intakes and wings and blue '06' with eagle-and-moon unit insignia and yellow/blue roundels); and a Chinese a/c (black '13242' with medium grey upper surfaces and light grey lower surfaces).

The decal sheet is excellently printed in brilliant colors and perfect register. (Most of the outlines a/c numbers and the Ukrainian and Chinese national insignia have their colors printed separately, so if the registration is off on your model, only you are to blame.) The 4-page instruction sheet has sufficient drawings to allow accurate painting of the color schemes and placement of the markings. Colors are called out in FS595 equivalents. Each scheme is accompanied by notes pointing out specific details and a list of references. This excellent sheet compliments the Academy kit very well.

**Hi-Decal Line**, 1/72-scale decals. HDL,  
Kilinskiego 22/10, 40-062 Katowice, Poland.

Hi-Decal Line continues to add something for the modeler of the a/c of the smaller air forces on every new sheet. As usual, these 9 cm by 13 cm sheets are crammed full of excellently printed decals in perfect register. Even the smallest details are distinct. The instruction sheets contain drawings showing the color scheme and placement of all of the a/c featured on the decal sheet. Colors are identified by FS595 equivalents. As always, there are lot of stenciling and other small items. Let's see what new from HDI :

F/A-18C/D(CR), #72-023. Most of this sheet is filled with markings for USMC F-18s: F/A18D two-seater of VMFA(AW)-224 'Bengals' at Cherry Point, an F/A-18D of VMFA(AW)-225 'Vikings' at El Toro, an F/A-18A of VMFA-251 'Thunderbolts' at Beaufort, and an F/A-18A of VMFA-115 'Silver Eagles' during Operation Desert Storm. Occupying only about square inch of surface area on this sheet are marking for an F/A-18C of 25 Squadron, Kuwait Air Force in 1993. The decals consist only of the Kuwaiti flag, the a/c number '410', and the KAF 'seal'. Not much in the way of decals, but the drawings of the camouflage scheme is worth the price of this sheet, particularly if you can sell the remainder of the sheet to a friend who builds USMC a/c.

**MiG-17 Fresco A, #72-030.** Here is a real small-air-force feast: While there are decals for 2 Soviet MiG-17s (blue '88' during the Warsaw pact invasion of Czechoslovakia in 1968 and gloss red a/c of the Soviet Air Force Aerobatic Team in 1956), the remaining four schemes are gems: (1) A East German a/c in 1960; (2) an Iraqi a/c in 1961, (3) a Royal Afghan a/c in 1962, and (4) a Mongolian a/c in 1966.

Here's a sheet you won't have to share with anybody, i.e. if you can afford to buy four Dragon kits (all the MiG-17s are Fresco A's).

**Su-17 M4 Fitter K, #72-031.** This sheets provides markings for six Russian Su-17M4 Fitter K's for the period 1992/94. All six a/c have different

camouflage schemes each of which are illustrated on the instruction sheet by port, starboard, and top views.

IPMS Ecuador Decals. 1/72-scale decals.  
Asociacion de Modelistas Plasticos del Ecuador  
IPMS, PO Box 21-713, Sucursal: Eloy Alfaro,  
Quito, Ecuador. \$4.00 per sheet.

These decals were announced in SAFO #72, but the actual decals were not available for review at that time. Now, I have the 1/72-scale sheets to review. These four sheets measure 16.5 cm by 11.5 cm; the colors are dense, the small squadron insignia clear, and the letters and serials distinct (which is good, because who wants to piece together FUERZA AEREA ECUATORIANA from individual letters?). The registration is a bit off on the national insignia, but this is barely noticeable on the roundels and the fin flashes can be trimmed to a straight edge. The only problem I had was that the protective cover sheet tended to stick to the decals and, when I tried to lift it off, tiny spot of decal came off with it. I assume this is because of the damp condition in Ecuador and I hope that, if placed in a high-humidity atmosphere, the cover sheets will come off without damaging the decals. I haven't tried to use these decals, but the above problem does indicate a rather thin varnish overcoat, I suggest first testing a part of the sheet you do not plan to use; they may need another coat of varnish.

The instruction sheets are simple but comprehensive, consisting of side-views with an occasional top-view. The FS595 equivalents are given for all colors and the placement of the decals is keyed to numbers on the decal sheet. English is used for all the captions.

The sheets are not numbered and are only identified by their subjects. The following numbering is arbitrary: (1) Mirage F.1JA FAE804; Lockheed T-33 FAE615; Cessna A-37B FAE383, BAC Strikemaster FAE244, Beech T-34C FAE 0030, Bell 212 823, Rockwell Sabre 40 FAE043, and Bell TH-57 FAE405. (2) IAI Kfir C.2 FAE901, IAI Kfir TC.4 FAE931, Lockheed L-100-20 Hercules FAE892, Lockheed T-33 FAE615, Alouette III FAE398, BAC Strikemaster FAE244, and Cessna 150 FAE00510. (3) Jaguar FAE302, Twin Otter FAE448, Bell 212 FAE823, Alouette III FAE398, Cessna 150 FAE00510, and TH-57 FAE405. (4) DHC Buffalo AEE501, IAI Arava T-204, Rockwell Sabre 75 AEE402, Beech Super King Air ANE231, SA.330 Puma AEE456, Turbo Porter E185, Cessna T337 Super Skymaster ANE206, Cessna T-41D AEE160, and SA.342L Gazelle AEE347.

You will notice that the last sheet includes both Army and Navy a/c, while the first three cover Air Force a/c. You will also notice that some of the air force a/c appear on more than one sheet.

These are indispensable decals for anyone attempting to model modern South American a/c.

**Hungarian FW-190F-8**, 1/72-scale decals. HAD  
Decals 72-006, Hobby Centrum, Hos u.1, Budapest  
VIII, Hungary.

HAD continues to provide us with decals for modeling aircraft in Hungarian markings. This sheet (6 cm by 8.5 cm) provides the national insignia, squadron insignia, codes, and a/c numbers for two FW-190s: (1) W+525 of 102/2. Squadron, Winter 1944 Hungary, LT Istvan Majoros. (2) W+510 also of 102/2. Squadron in the Winter of 1944, Lance Sergeant Ferenc Timler. Both a/c are in standard Luftwaffe camouflage with Hungarian

crosses, tricolor rudders, and large white a/c numbers '25' and '10' on the cowling.

The instruction sheet has side-view drawings of both a/c and a split plan view. A yellow band circles the fuselage immediately behind the national insignia. The wings carry large yellow 'V's, with the apex at the trailing edge of the lower surface and the open end wrapping around the leading edge onto the upper surface. These markings are almost obscured by the national insignia. There are not many non-German schemes for the FW-190, so here's your chance to built one without a swastika.

**Sukhoi Su-22M3**, 1/72-scale decals. HAD Decals 72-007, Hobby Centrum, Hos u.1, Budapest VIII, Hungary.

HAD again turns their attention to the modern era with these decals for the Fitter. This 5.5 cm by 9 cm sheet contains the markings for two a/c: (1) red '09' with Hungarian red-star insignia, and (2) red '05' with the chevron insignia. The instruction sheet has side views for both a/c and a split plan view of '05'. Included on the decal sheet is the cartoon bee for the rudder of '05'. Also included are numerous small triangles in yellow, red, and blue, yellow 'rescue' arrows, and yellow rectangles. Curiously, the instruction sheet gives no indication of the placement of these small items. Missing from the decal sheet are the prominent 'intake warning' markings, but these are included with all kits of the Fitter.

This is one of HAD's more ambitious sheets. That it falls somewhat short of perfection should not deter anyone wanting to add an Hungarian Fitter to their collection.

**Boomerang, 1/72-scale decals. 72-014 PD Models, PO Box 883, Eltham, Australia, 3095.**

Here's a very nice set of decals to apply the newly re-released Airfix kit of the Commonwealth Boomerang. This sheet provides codes, serial numbers, and personal insignia for six a/c of RAAF 4 Squadron operating in New Guinea. Moratai, and Labuan: (1) A46-199, QE-Y "Home James"; (2) A46-121, QE-N "Olga"; (3) A46-194, QE-K "The Grim Reaper"; (4) A46-195, QE-A "Phooey", (5) A46-179, QE-W "Bouncing Bid", and (6) A46-209, QE-J "Bachelor Son"; and (7) A46-193, QE-H "Struth". Roundels and fin flashes are not provided.

The sheet is extremely well printed in brilliant colors. The colorful personal emblems are in perfect register, and the names that require outlines are printed in two parts so that you can obtain perfect register. The instruction sheets are the result of extensive research and include a brief history of 4 Squadron, notes on the wear and tear suffered by 4 Squadron Boomerangs, a discussion of the rather illusive RAAF "Foliage Green" for which FS34092 is given as a good approximation, side and top views of the one a/c (QE-Y) in two-tone top camouflage, and side views of the all the remaining a/c which were in foliage green overall. As an example of the depth of scholarship, several a/c have slightly different styles of either codes or serials on either side; the decals provide for these differences.

I don't know what decals Airfix are providing with their new kit, but they can't be better or more interesting than these. This sheet can be obtained via mail order from SAFCH member David Loughhead at: Modelworks, PO Box 60, Kalorama, Australia 3766. Review decals provided by Modelworks.

# THE MiG-21s OF THE STATE OF CAMBODIA'S AIR FORCE

Darasy Var

From 1989 to the end of 1991, Cambodia was officially called the "State of Cambodia" (SOC) and the country adopted a new constitution and a new flag. In addition, the air force adopted new national insignia:

1) Fin markings. The roundel on the fin is a disc divided horizontally into a blue upper half and a red lower half. Superimposed on this is the five towers of the temple at Angkor Wat in yellow. This disc is outlined with a thin, discontinuous yellow border. There are two variants for the design of the temple: (a) Derived from the previous design of the Peoples' Republic of Kampuchea AP (during the Vietnamese forces occupation), the five towers are schematic and positioned low on the disc. (see drawings). (b) In this variant, the temple is more elaborate and similar to the design of the temple on the national flag (see drawings). This roundel is also larger than that of the first variant.

2) Wing markings: These are an adoption of the North Vietnamese markings with the roundel flanked by large bars. The type of the roundel is the first variant as described above, but without the blue. This is probably the insignia used by the PRKAF in early 1989. These markings are applied in the usual four positions on the wing; two on the undersurfaces and two on the upper surfaces.

By 1989, Cambodia had received 21 new MiG-21bis and 3 MiG-21UM trainers from the former USSR via Vietnam. A small air unit, "701", was formed to operate these aircraft whose

duty were ground support and reconnaissance. These aircraft were painted light grey overall.

After the Vietnamese forces withdrew in 1989, the country was torn by civil war between the nationalist factions and the state. The latter, without the support of USSR, could not maintain airstrikes on the insurgency near the frontier. It is said that the MiG-21s did not participate in air operation against guerilla forces either nationalist or Khmer Rouge. They were probably used for air survey in the northwest of the country and for air strike around the capital of Phnom Penh.

In 1991, a peace agreement was signed at Paris between the factions, putting the country under the control of the UN Transitional Authority in Cambodia (UNTAC). In 1992, the MiG-21 were handed over to a UNTAC Indian air detachment for disposal. However, in 1994, there remains in Cambodia 16 MiG-21bis and one MiG-21UM. It is doubtfully that all are airworthy because of the lack of spares and maintenance. It is said that Israeli Air Industry is willing to upgrade these aircraft.

Darasy Var (SAFCH #1319), 16 Rue de la Clairiere, 91000 Evry, France.

[Editor's Note: The author was able to photograph some of these aircraft while he was visiting Cambodia in 1994. Therefore, his drawings should be most accurate available on this subject.]

"I would like to introduce our readers to new line of 1/72-scale decals produced in Ukraine by Kanga. One is enclosed for your evaluation.

(1) Mil Mi-4: a. Polish AF; b. Czech civil Agrolet; c. USSR AF, Kolobzegg, Poland, 1971; d. Czechoslovak AF. \$1.50.

(2) BAC Lightning F.6: a. XR989/J, 5 Sqn. RAF; b. XR728/BA, 11 Sqn. RAF. \$1.80.

(3) Supermarine Spitfire Mk.XIV: a. 610 Sqn. RAF, England, 1944; b. unknown RAF squadron, inscription 'Channel Picket III', England, 1944. \$1.00.

(4) Su-17/22: a. Su-17M3, 136 Fighter-Bomber Air Regiment, Soviet AF, Kanagar, Afghanistan, 1986; b. Su-17M4R, 16 Reconnaissance Air Regiment, Soviet AF, Bagram, Afghanistan, 1981; c. Su-22, Peruvian AF; d. Su-17M4, Ukrainian AF, 1994. \$2.00.

(5) Su-25UB: a. Russian Black Sea AF, "Jaws" sqn., Saki airfield, 1994; b. Su-25UBK, Czechoslovak AF, Ostrava airfield, 1988. \$1.80.

(6) Su-28: a. Aircraft demonstrated at Le Bourget 1998; b. DOSAAF organization. \$1.80.

(7) Polikarpov I-153: a. Soviet AF, 1941; b. Soviet AF before 1941, red stars with roundels; c. German AF, with swastikas, 1941; d. Finnish AF, 1940. \$1.50.

(8) La-7: a. 155 IAP (Fighter Aircraft Regiment), pilot Col. Dolgunun, 28 victories, 1945; b. 156 IAP with white '14', pilot unknown, Poland/Germany, 1945-46; c. a/c built with money given by workers from Gorky City factories, inscription 'Gorkowski

Rabochiy'. \$1.00.

(9) Su-9B: a. Anti-Aircraft Forces (PVO), Nebit-Dag airfield, Turkmenia, 1971; b. Soviet PVO, Mirny-14 airfield near Cosmodrome Severny; c. a/c which participated in the interception of Gary Power's U-2 on 1 May 1960; d. a/c used for weather reconnaissance from Bielorusian airfields in 1970; e. a/c displayed at Marinowka airfield at the Stawropol Flying School, numerous slang inscriptions. \$2.00.

(10) Red Stars for contemporary a/c, 18 x 14 cm sheet. \$1.70.

(11) White code numbers for contemporary Soviet a/c, 18 x 14 cm sheet. \$1.70.

(12) Red code numbers for contemporary Soviet a/c, 18 x 14 cm sheet. \$1.70.

(13) Black/white 'Invasion' stripes for Operation Overlord, summer 1944. \$1.70.

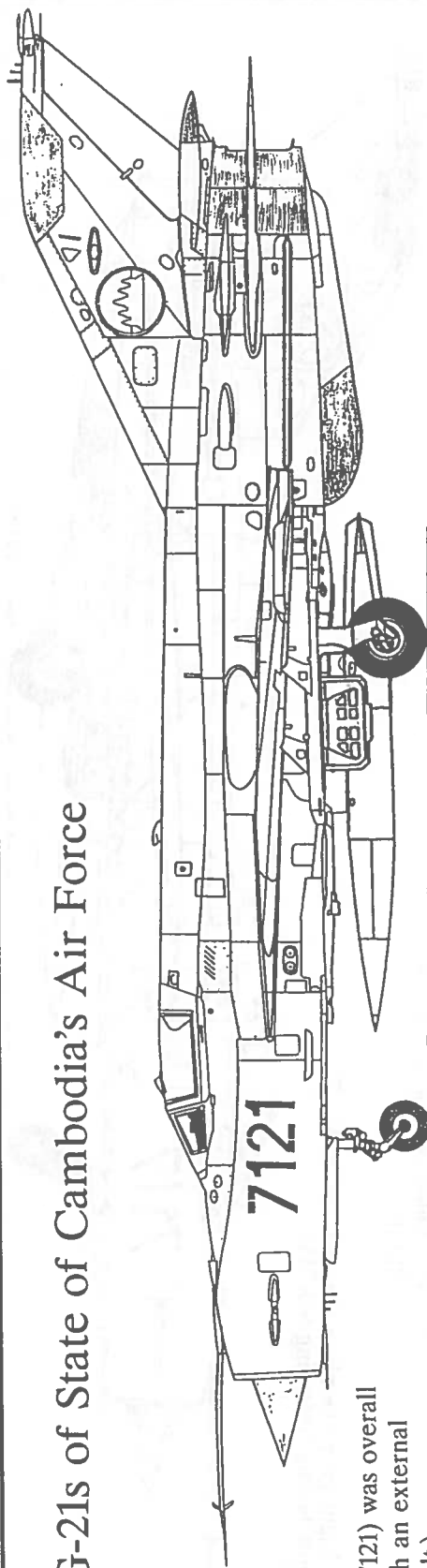
(14) Hawker Sea Hawk: a. F.B.3, 811 Sqn. Royal Navy, HMS Centaur; b. F.B.3, 898 Sqn. Royal Navy, HMS Albion, 1954; c. Mk.50, 860 Sqn. Royal Netherlands Navy, Karl Doorman; d. the same except with different codes and emblem; e. F.G.A. Mk.6, 300 Sqn. Navy Forces India, Vicrant. \$2.20." Igor N. Gordelianow (SAFCH #1066), ul. Strijskaja 181 kw.18, Lvovskaja obl. g. Drogobych, Ukraine 293720.

Mil Mi-4, 1/72-scale decals, Kanga, Ukraine. 18 cm by 14 cm.

This sheet contains national markings, codes,

fuselage bands & flashes, and tail-warning inscriptions for four helicopters: (a) Polish white '314', (b) Czech Agrolet white 'OK-OVF', (c) Soviet white '015', and (d) Czechoslovak AF white '2128'. This sheet also contains one instrument panel and numerous black, red, and white tiny stencils. The printing is generally good, the colors dense, and the white which looks sufficiently opaque to prevent the base color from showing through. The instrument panel is black on a transparent background and could use a little color. The stenciling may, or may not, be readable, depending on your eyesight. The instruction sheet is simple with side-views of each subject and a 4-view diagram showing the location of the stenciling. All the text, including color identifications, is in Cyrillic characters so modelers familiar only with the Latin alphabet will need to find other references for the color schemes. Igor has offered to send any number of these decals for sale through SAFO. (See list above.) However, I'm not sure how well these will sell. Therefore, if you're interested in any of these decals, I suggest you send me the money for them (adding \$0.50 for the first sheet and \$0.25 for each additional sheet for postage). After waiting a few weeks to assess the demand, I'll order a batch from Igor. I really think we should help our friend in Ukraine, and at these prices you can hardly go wrong.

# The MIG-21s of State of Cambodia's Air Force

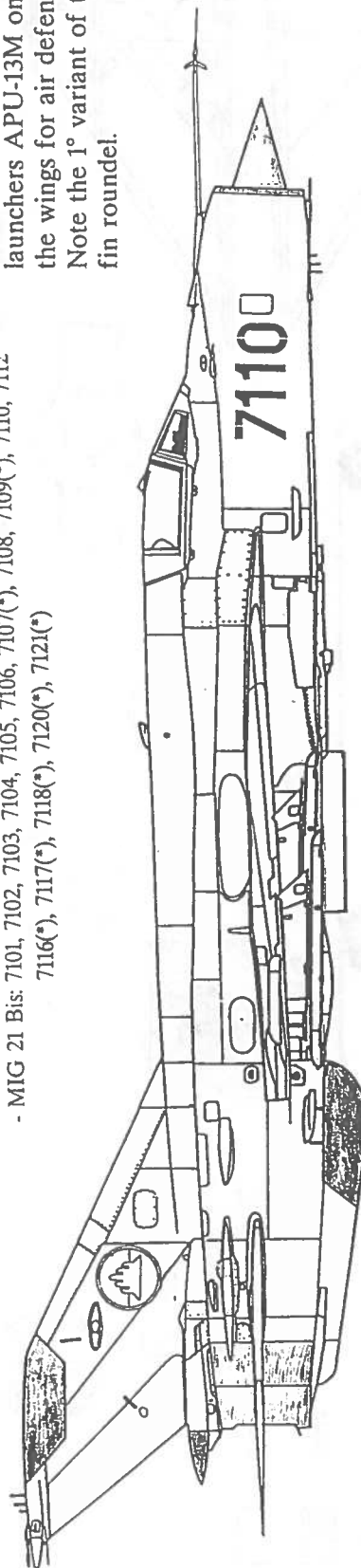


MIG-21 Bis (7121) was overall light grey with an external fuel tank(490 lt.)  
Note the fin national marking is the 2° variant roundel.

Serials numbers of the unit 701's MIG 21 :

- MIG 21 Bis: 7101, 7102, 7103, 7104, 7105, 7106, 7107(\*), 7108, 7109(\*), 7110, 7112 7116(\*), 7117(\*), 7118(\*), 7120(\*), 7121(\*)

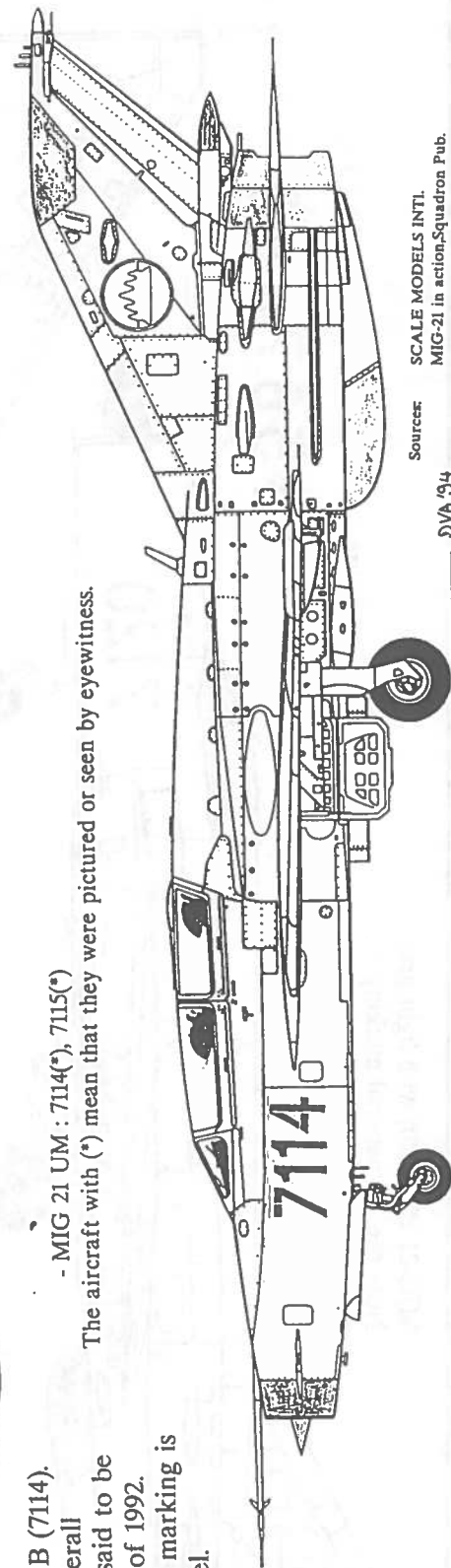
MIG-21 Bis armed with 2 missile launchers APU-13M on both sides of the wings for air defence role.  
Note the 1° variant of the fin roundel.



MIG-21 UM Mongol B (7114).  
this trainer was in overall light grey finish and said to be destroyed at the end of 1992.  
Note the fin national marking is the 2° variant roundel.

- MIG 21 UM : 7114(\*), 7115(\*)

The aircraft with (\*) mean that they were pictured or seen by eyewitness.



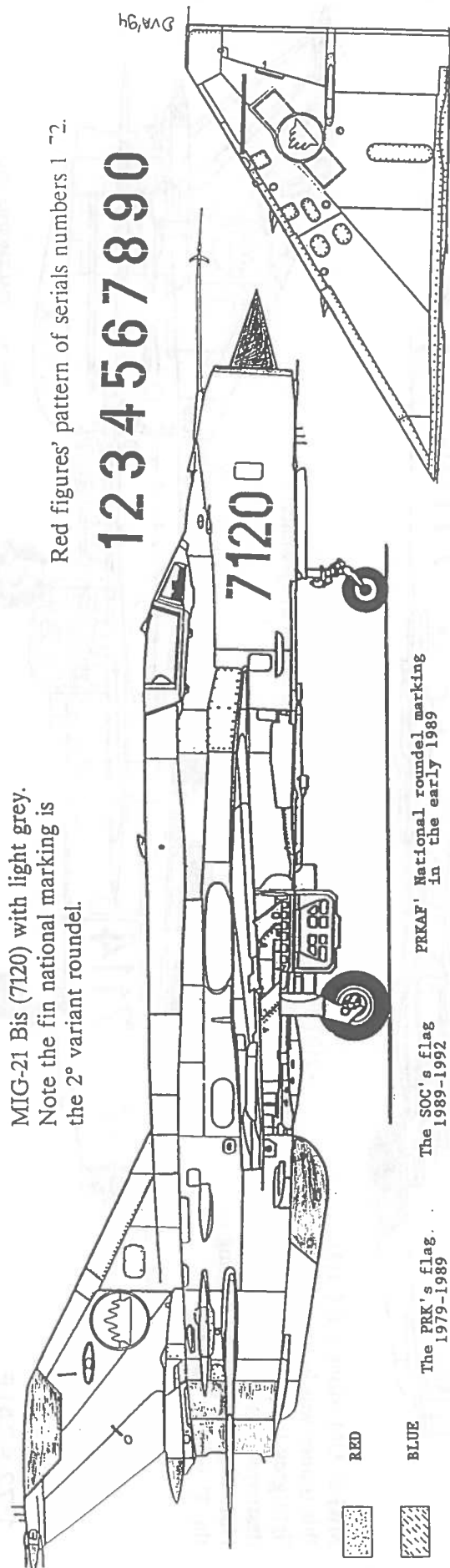
1:72 SCALE

Source: SCALE MODELS INTL.  
MIG-21 in action, Squadron Pub.  
DVA '94

MIG-21 Bis (7120) with light grey.  
Note the fin national marking is  
the 2° variant roundel.

Red figures' pattern of serials numbers 1-2.

1234567890

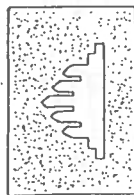


RED

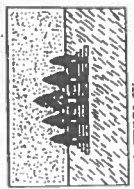
BLUE

YELLOW

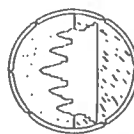
The PRK's flag.  
1979-1989



The SOC's flag  
1989-1992

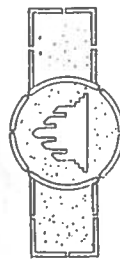


PRKAF' National roundel marking  
in the early 1989

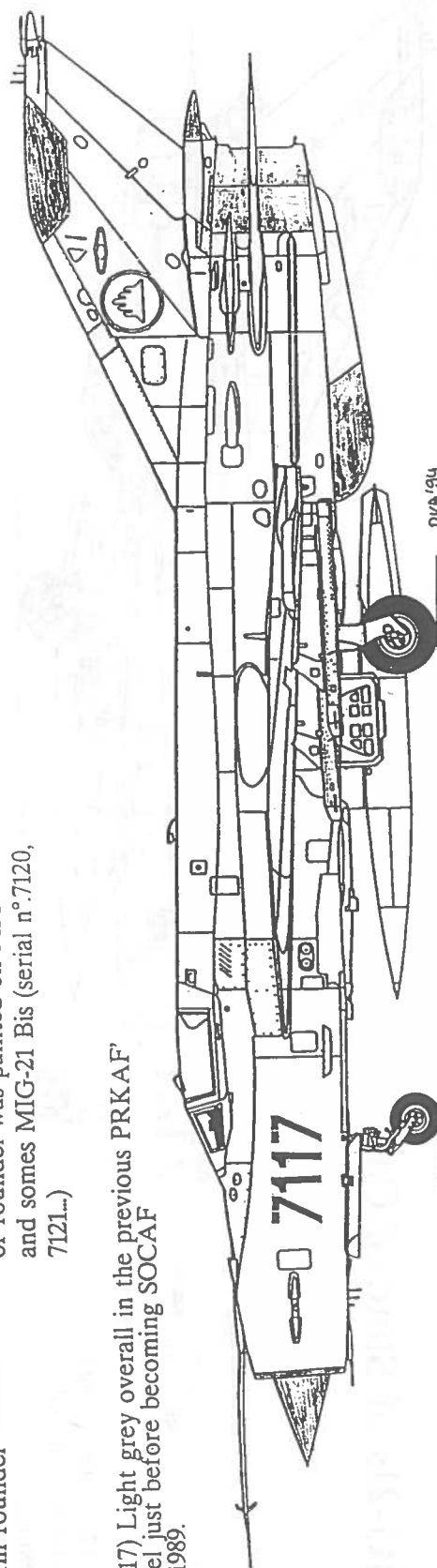


State of Cambodia's air force roundel.  
1° variant of fin roundel

2° variant of fin roundel. This design  
of roundel was painted on MIG-21 UM  
and some MIG-21 Bis (serial n° 7120,  
7121...)



Wing markings were located  
on both sides of the wings.



MIG-21 Bis (7117) Light grey overall in the previous PRKAF'  
marking roundel just before becoming SOCAF  
by the end of 1989.

DVA '94



## THE ANF LES MUREAUX 170

John Raymond

From the mid-1920's to the mid-1930's the Ateliers de Constructions du Nord de la France et des Mureaux specialized in braced, high-wing monoplanes. It was to this formula that the company produced the Les Mureaux 170 to meet a 1930 French Air Force requirement for a new fighter with a supercharged engine to provide a speed of at least 217 mph. The 170 was of all-metal construction with a gull wing braced by parallel struts to the lower longerons and the fuselage had a very racy design. The landing gear consisted of a nicely-spatted wheels and a fixed tail skid. All in all, the 170 had a number of modestly-advanced features for its time period.

The specifications of the 170, according to company records, are: Engine: in-line 690-hp Hispano Suiza 12Xbrs, Max. Speed: 236 mph at 14,765 ft. Climb Rate: climb to 32,810 ft in 23 min 25 sec. Ceiling: 34,120 ft. Weight: empty 2,643 lb; max at take off 3,682 lb. Dimensions: span 37 ft 4 inch; length 25 ft 11 inch; height 9 ft 10.25 inch. Wing Area: 210.55 sq ft.

The Mureaux 170 was displayed at the 13th Paris Aircraft Exhibit in December of 1932. Also on display were some fifty-three aircraft, most of which were one-of-a-kind airplanes, including the trimotor Mureaux 140T commercial monoplane.

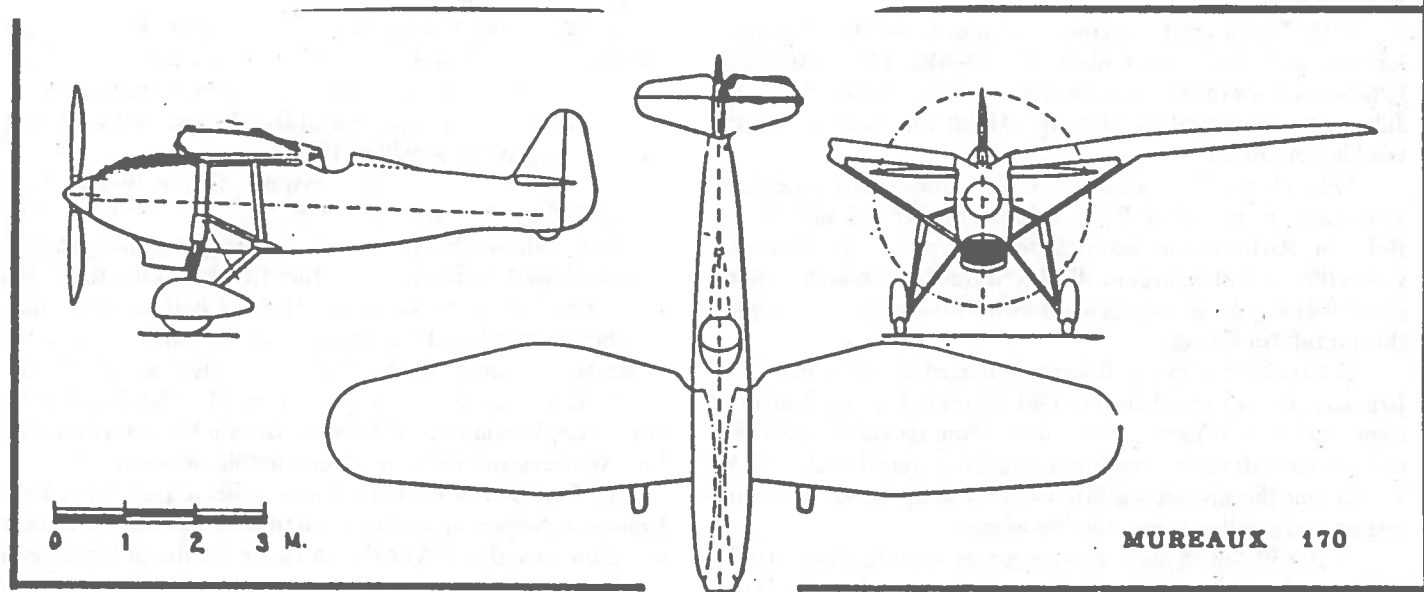
Mureaux made their mark with the model 115 and the model 117, but many other designs were rejected by the French Air Force. Among some of the designs that never saw production were the Mureaux 130 which was a parasolwinged monoplane designed for reconnaissance and observation. It was offered to the French Military in 1930, but wasn't accepted so it only saw

the prototype stage. Another design that was a sole prototype was the Mureaux 190 which was a racy little single-seat fighter purposed as a home-defense fighter. It was compact with an enclosed cockpit and retractable landing gear. It's only failing was an engine which was so unreliable that the program was discontinued due to the unprofitability of further engine testing.

In the 1920's, the French Air Arm issued a requirement for a three-seat night reconnaissance aeroplane and Mureaux responded with its Mureaux 120 design. This was a high-wing cantilever monoplane of ungainly shape. Two machines were tested, but official interests swayed more toward the Loire 30 design and further development was soon abandoned.

[Author's note: All in all, the Mureaux 170 was a very unusual aircraft that I found quite interesting and I have enjoyed sharing this data. I will continue to dig into my reference library to bring you information on the more obscure small-air-forces aircraft. Here at Aircraft Research Ltd, I like to specialize in obscure airplanes most of which have a character all their own. My research packages on aircraft contain 3-view drawings and all the written data I find, such as technical and production data. I always include all photos I find, and, most importantly, a 3-view drawing.

Any SAFO member who needs information on a hard-to-find aircraft please drop me a line at: Aircraft Research Ltd., 68 Gordon Parkway #2, Syracuse, N.Y. 13219 care of John RaymondManager.]



[Editor's note: John also sent a photo of the Amiot 110 which I mistakenly identified as a ND 62. John replied, "Regarding the Amiot 110: two prototypes were built and, in July of 1929, the first prototype was destroyed in an accident after which the project was abandoned. The aircraft is very similar in appearance to the ND-62: the ND-62 had a 690 hp Hispano and the 110 had a 500 hp Hispano. The ND 62 was a refined version of the ND 42. According to the data I have, more than 730 ND 62 were built and flown by France and Peru. Here's a list of the technical differences between the two:

	Amiot 110	ND 62
Max Speed:	184 mph	168 mph
Range:	311 mi	559 mi
Empty wt:	2,469 lb	3,020 lb
Max wt:	3,307 lb	3,968 lb
Span:	34 ft 5.3 inch	39 ft.4.4 inch
Length:	21 ft 4 inch	24 ft 7.25 inch
Ht:	9 ft 2.25 inch	9 ft 10.25 inch
Wing Area:	226.04 sq ft	322.07 sq ft

# BELGIAN HANRIOT HD-1 s/n 75

Andrew Simpson

[Editor's note: This is the second in an occasional series on aircraft in the Royal Air Force Museum that have connections with small air forces. The author desires further information on these aircraft.]

Sept 1918: S/n 75 was built by the Rene Hanriot's works at Neuilly-Sur-Seine, Paris. The camouflage scheme was applied at Beaumaris Park before the aircraft was delivered to le Escadrille de Chasse, Aviation Militaire Belge as HD-75. This unit, the Belgian Air Force's famous 'Thistle' Squadron, was based at Les Moores (The Moors) near La Panne, Belgium. The unit's pilots included Willy Coppens, Jan Olieslayers, and Andre de Meulemeester. It is thought H-75 was allocated to the flight commanded by de Meulemeester. Willy Coppens may have flown #75 (at least after the war).

c.1919: The aircraft was allocated to 7<sup>eme</sup> Escadrille de Chase at Nivelles.

1920: The code number 75 was removed from rudder and replaced by the markings H-1 beneath the wings.

1922: The Belgium Air Force entered H-1 in the World Aerobatic Championship at Nice, France, where it won the competition.

1928: Withdrawn as a front-line fighter, H-1 continued in use for training. Around this time, the headrest fairing and the auxiliary fuel tank it contained were removed to make room for a baggage bin.

1930: The aircraft was re-covered with new fabric.

1932 or 1934: S/n 75 was withdrawn from service by the Belgium Air Force.

1934: The aircraft was sold as surplus to Andre Drossaert, joining the Belgian civil register as OO-APJ. The registration letters stood for the three Drossaert brothers: Andre, Paul, and Jules, who co-owned the aircraft. About this time, oversized wheels were fitted.

1937: Ownership passed to ex-Spad pilot Jacques Ledure, who based the aircraft at Evere aerodrome. While holidaying in Belgium, Richard Shuttleworth, founder of the Shuttleworth Collection, saw this aircraft displayed outside a cinema where the WWI film 'Wings' was being shown. He subsequently bought the aircraft for £15.00.

22 Nov 37: S/n 75 was flown by Richard Shuttleworth from Brussels (Evere) aerodrome to Old Warden, landing from customs clearance at Lympne en route. After arrival at Old Warden, the aircraft was re-conditioned and registered as G-AFDX. At this time the aircraft was fitted with a 120-hp Le Rhone rotary engine and smaller, more suitable wheels.

17 Jun 39, S/n 75 made two demonstration flights at Brooklands Garden Party. After the Party, Shuttleworth took off not knowing that a linchpin had not been replaced after a tyre-puncture repair and a wheel came off during take off. Unaware of this loss, Shuttleworth crashed while landing at Old Warden. The propeller was smashed and the aircraft tipped over, damaging the wings and tail, but Shuttleworth climbed out uninjured.

1940: The wing, which had been stored at Brooklands for repair, was destroyed during a bombing raid on the factory. The rest of the aircraft was stored at Old Warden.

1962: S/n 75 was sold by the Shuttleworth Collection to Marvin K. Hand of San Francisco. The original 110-hp Le Rhone engine was retained by the Shuttleworth Collection for

installation in their Avro 504.

March 1963: The aircraft remains arrived in USA. As delivered, the aircraft consisted of fuselage, tail, landing gear minus one wheel and one V-strut, engine cowling minus left-hand panel, and upper cabane 'W' strut. The pilot's seat was missing and only one instrument remained. The new owner purchased a replacement engine, a 120-hp Le Rhone 9JB, from fellow restorer Jack Canary. In 1964, he acquired copies of original drawings from Italy, from which a new set of wings was built to replace those destroyed during the Blitz. One fuselage longeron had to be repaired, although the original turn buckles and fittings were re-used. New wheels were made using Curtiss Jenny hubs, Thomas-Morse rims, new spokes, and new clincher motorcycle tyres. A new turtle deck and auxiliary fuel tank and fairing were fitted. The aircraft was recovered in man-made Dacron instead of linen. The restoration was assisted by Newton Craven. An authentic propeller found in Leicestershire and shipped to US. Other authentic components acquired were: metric altimeter from a Nieuport that crashed on the Western Front in 1918 and was 'souvenired' by a 'Tommy'; Manettes (throttle and fine adjustment) from a Henlow scrap heap; hand pump from a former RFC pilot; pilot's seat 'souvenired' from a crashed French aircraft on the Western Front; and machine gun donated by an American ex-Hanriot pilot.

27 April 1968: A 10-minute maiden flight was flown by Walter Addems. The only problem was a slight tail-heaviness which was soon remedied. The aircraft flew from Sonoma County Airport, Santa Rosa, California.

18 May 1968: Owner, M. K. Hand, made his first flight in the aircraft. S/n 75 made its first public appearance soon afterwards at the Watsonville, California, Fly-In. Registered as N-75 (with special FAA permission 21.04.67). The restored aircraft was one of only five surviving HD-1s.

May 1973: S/n 75 was transported in a World Airways Boeing 747 to the Paris Air Show. Through scheduled to fly at the show, bad weather prevented this. Its appearance was rather overshadowed by the crash of the Tu-144 'Concordski' at the show. Prior to the show, the Hanriot had an airworthiness certificate issued 05.02.73. It seems the aircraft flew little on its return to the 'states', being stored in a hanger at Schelleville.

20 Dec 1978: S/ 75 was present by Mr. Hand to the Royal Air Force Museum via the Battle of Britain Museum Foundation Inc., Washington, DC (for tax deductible reasons).

18 Jan 79: An RAF Hercules collected s/n 75 from San Francisco Airport and delivered it to RAF Lynham. The aircraft was then moved to RAFM Restoration Centre at Cardington.

Jan-Dec 1979: The aircraft was restored at Cardington by a team led by M. P. Sayer. The Dacron covering was replaced by authentic Irish linen, and the aircraft was painted in its 1918 colors as a le Escadrille aircraft. The engine was probably exchanged for the one in the Shuttleworth Collection, but now the aircraft is fitted with an engine purchased in USA ?16415.

10 Dec 79: Aircraft moved from Cardington to Hendon by a team from RAF Abingdon. It has remained on display there ever since.

Andrew Simpson, Department of Aircraft & Exhibits, Royal Air Force Museum, Hendon, NW9 5LL, England.

"I was very excited to see Mr. W. Yip's article of RoCAF F-100 s/n in SAFO #70. The s/n of the first 80 'A' models were complete and accurate. They filled many "holes" of my s/n collection, and it inspired me to begin writing a book about F-100s in the RoCAF

"I have more information about the 38 later F-100As and the other eight F models. It's a regret that the RoCAF code of the second batch were not always allocated in sequence with the USAF s/n as the first batch were, so there were still some holes. Another question is that there might be more than 38 aircraft in the second batch since 0217/531579 were not in Mr. Yip's list. The codes were:

F-100A	531535	0201	531596	0220
	531536	0202	531598	0221
	531538	0203	531601	0222
	531541	0204	531602	0223
	531542	0205	531603	0224
	531543	0206	531604	0225
	531550	0207		0226
		0208	531594	0227
	531555	0209		0228
	531560	0210	531620	0229
	531561	0211	531625	0230
	531563	0212	531626	0231
	531565	0213	531637	0232
	531571	0214	531639	0233
	531577	0215	531642	0234
	531582	0216	531570	0235
	531579	0217	531569	0301*
	531589	0218	531582	0302*
		0219		

\* original F-100A fin

F-100F	0007	563753	0011
	0008	563862	0012
586980	0009	563733	0013
	0010	563808	0014

"I am asking for help to (1) fill the holes, (2) trace the original USAF unit of each RoCAF Super Sabre (if possible), and (3) provide photos in original unit's marking. I found some came from 479th Fighter Bomber Wing in George AFB, California; 531542 was used by Air Training Command at Nellis AFB, and 531603 by the Connecticut ANG. Other information and photo of RoCAF F100 are also welcomed. Finally, there is one thing to be added to Mr. Yip's article: The national insignia were also carried on the under sides of both wings."

Clarence Fu (SAFCH #884), P.O.Box 112129,  
Taipei, Taiwan, R.O.C.

"With reference to the photo in SAFO #73 captioned 'A Bulgarian Albatros', I would offer the following comments: The term 'Axis' is not appropriate to WWI; it is a WWII term referring to Germany, Italy, and Japan. The correct name for the alliance of Germany, Austro-Hungary, Turkey, and Bulgaria in WWI is the 'Central Powers'.

"There is nothing in the photo to indicate that this a/c was Bulgarian. First, the a/c is not an Albatross C.III, but an LVG, factory designation C.VI, military designation B.II, powered by a 120-130 hp Mercedes. The colour would have been typical of early German a/c up to late 1915 or so: an overall fawn, or greyish brown colour; the exact shade varies among manufacturers. In view of this variation, it is pointless to try to be precise (as some do) and stipulate Methuen colour shades to this period. "The cross on the lower wing was, by no means,

uncommon on German a/c of the period and the fuselage cross type was also seen on other German a/c, it took some time before a rigid standardized form was universally adopted and even then there were variations (e.g., the fat crosses of the LFG Roland scouts). Some people always make the mistake of trying to put various points, features, etc. into neat separate compartments; this is nonsense when dealing with WWI.

"The fuselage cross like all the other markings was, of course, painted by hand. I can not comment on the words on the fuselage because they can not be seen on the published photo. Unless the fuselage motto is in Cyrillic script, there is nothing here to indicate that the a/c is Bulgarian.

"During WWI, a coloured pamphlet was published allegedly depicting the various national markings of allied and enemy a/c. One drawing showed an 'iron cross with a green band on the trailing edge of the wing' and it was entitled 'Bulgaria'. This references was been repeated over and over, but this writer has still to see any definite proof that such a marking was used. There seems to be nothing on the photo to suggest these markings.

"Some time ago, I saw a photo of what were described as Bulgarian a/c (circa 1917); there were also LVGs, I think, but the 'iron cross' on the rudder had a diagonal (St. Andrew's) cross superimposed. This cross may have been green, but it is only a guess."

Harry Woodman (SAFCH #533), 10 The Byeway,  
East Sheen, London SW14 7NL, England.

"In reference to Dan Hagedorn's comments, in SAFO #73, on the color scheme of the Mexican AT-6B that participated in the attack on U-129 on 7 July 1942: I obtained photos of the first six AT-6B's to arrive in Mexico from Hector Davilla Cornejo, Editor of 'America Vuela'. He had found these photos in the Archivo General de la Nacion. If the photo evidence is correct, the first six AT-6B arrived in Mexico with their upper surfaces in olive drab and lower surfaces in grey.

"My drawing of Mexican AT-6B B-110 was based on these photos. Copies of these photos have been sent to Dan for use in his forthcoming book on the AT-6 in Latin America service."

Santiago A. Flores (SAFCH #588), PO Box 430910, San Ysidro, CA 92143-0910, USA.

"I have comments to add to Lennart Andersson's article on the Royal Siamese Air Force (SAFO #72). I'm a bit dubious about the Junkers F.13. I've never seen anything about an F.13 in Siamese service in any Thai publication, but it is possible that it was overlooked it served only briefly in Siam.

"Lennart missed one type; the indigenous Prachati-pok fighter. One example was built about 1928, and it did fly, although it probably never received armament. Only one photo of the aircraft seems to exist and no information is available except that it had a 450-hp engine. However, it was included in the Siamese AF type-number systems as Fighter Type 5. As to the Heinkel Hd.43, it is generally accepted that only one went to Siam, as in Lennart's text, not two as in the table.

"Some of these early aircraft lasted a long time in Siam service. The Breguet XIVs were still in first-line service, with Group 5 at Prachob Khiri Knan in Southern Thailand, as late as February 1940. The Bulldogs were still being used as trainers in 1940. The two Boeing 100s (P-12s) were used for coastal patrol/navy cooperation work in 1941/42 and both were still on strength in 1945, probably as trainers."

John MacGregor (SAFCH #766), 13 Foggyley  
Garden, Dundee, DD2 3LG, Scotland.

"I wish to make a personal appeal to the membership of the Small Air Forces Clearing House to gather the Society's resources behind supporting the fund drive by the Polish Air Force Veterans Association (PAFVA) to refurbish the Polish Air Force Memorial at Northolt, England. I would ask that the appeal be published in the Small Air Forces Observer to convince the Society's members to contribute to this worthy cause.

"The Polish Air Force fought from the very first day of the Second World War to the last, achieving an enviable record in the process and have seldom been credited enough for their service. Let me briefly illustrate just some of that record that reads more like an epic saga.

"Contrary to most accounts the Polish Air Force was not destroyed on the ground in the opening hours. In fact in the closing days of August 1939 the Poles dispersed their best aircraft to auxiliary combat fields, leaving only their obsolete and unserviceable aircraft out in the open at peace time bases. The Luftwaffe hit these fields as expected and reported that the Polish Air Force had been virtually annihilated. Despite such claims, the Luftwaffe losses continued to mount. At the end of the Campaign, the Poles claimed 129 kills, which was conservative, n anything. Luftwaffe records showed 258 aircraft were total losses and 263 were severely damaged, a total loss rate of over 20%, much greater than that suffered in the French Campaign.

"Only when the situation on the ground became untenable did the Poles execute their contingency plans to evacuate the highly-trained air force personnel to allied nations. They withdrew to Romania and Hungary and, through series of diplomatic subterfuges, outwitted the Nazis who were trying to strong arm these nations into interning the Poles and preventing their escape. The Poles then made their way to bases in North Africa, France and England to join the L'Armee de l'Air and the RAF and carry on the fight against Hitler's onslaught. When the Blitzkrieg raged over Holland and France the following spring the Poles acquitted themselves well achieving 56 confirmed air to air victories. When France collapsed, the Polish airmen were ordered once again to escape to a safe haven in England, the next line of defense.

"In England, they achieved their greatest fame during the Battle of Britain. The British had been reluctant to use the Poles due to the language barrier and other concerns. By midsummer, however, the British were desperately short of fighter pilots and activated two squadrons 303 Kosciszko and 302 Poznanski. Flying Hurricanes the Poles soon dispelled any reservations about their fighting ability. By the end of the Battle, the 303 Squadron was the top scoring squadron with 126 kills, despite the fact that they only joined the fight after it was more than half over. The next highest scoring squadron was 501, a British unit with only 87 kills.

"Throughout the balance of the war the Polish Air Force in England was expanded to include whole wings of fighters and bombers. They served in every major Campaign in the ETO and the Mediterranean. Polish Wellingtons ranged far and wide shepherding convoys and attacking Uboats. The Polish bomber squadrons took part in the first "Thousand Plane" bomber raids over Germany. Polish fighter aircraft provided bomber escort for the RAF and the U.S. 8th Air Force. They ran

sweeps over occupied France beginning in 1941 and helped snuff out German units attempting to throw back the Allied forces at D-Day. Many of the V-1's shot down wound up as victory markings on the sides of Polish Mustangs.

"At the close of the war, nearly every combatant reaped the benefits of victory the most coveted one being freedom. By contrast, the Poles became a casualty of realpolitik when the allies sold out the Poles to the Russians. Everything they fought for was betrayed. The Poles could not return home. They would have been imprisoned or liquidated by the Communists. Despite this bitter turn of events, the Poles settled in England, Canada and the U.S. and became productive citizens of their adoptive lands. These are the men who gather at their reunions, just like the members of our VFWs, some of whom are our Society members, our brothers, our uncles or our fathers. Like most World War II vets, they are getting fewer and fewer every year. It is surely the responsibility of the next generation to keep alive the memory of their sacrifice.

"Perhaps our contributing to the renovation of the PAFVA Memorial would be a good way to redress this injustice and pay homage a gallant group of fighting men, so long overlooked."

Michael J. Dobrzelecki (SAFCH #682), 1720 Long Hill Rd.,  
Millington, NJ 07946, USA.

[Editor's Note: In the US, send contributions to K. Steve Rasiej, Chairman of the Appeal in the USA, c/o Polish Air Force Veterans Association, 393 Orchard Terrace, Bogota, NJ 07603. Sorry, but the Appeal booklet did not include an address in England.]

"I have just received the April issue of SAFO and I would like to comment on the review by Leif Hellstrom of my Squadron/Signal book on the Arab Air Forces. Mr. Hellstrom states that 'the volume does not contribute much that had not already been published elsewhere'. Surprisingly, Mr. Hellstrom does not mention the 232 photos in the publication, 85% of which had never been published before. Mr. Hellstrom does not seem to know the subject very well (we can not be experts in everything, can we?), because, otherwise, he would have commented favourably on some of the subjects depicted, such as the red-tailed Hunters of Jordan and Iraq and the F-5As of the Royal Libyan AF, to name but a few. His comments on the photographic emphasis on modern aircraft is also unwarranted. I have yet to see a history of such an obscure subject without emphasis being placed on the recent past! Common writing sense says that one has to expand the subject the nearer one gets to the present time. Nevertheless, over 80 of the photos are of 1960s vintage or earlier, which is early aviation as far as many Arab air forces are concerned. As to the text, (where Mr. Hellstrom accuses the book on concentrating on deliveries), he should note that a good part of the story is in the captions.

"SAFO readers may be interested to know that I am preparing (and have almost completed) a detailed history of the Arab Air Forces. The text in the Squadron/Signal book is but a summary. As an example, Egypt's 130 pages of text had to be condensed into 12 pages for Squadron/Signal. Unfortunately, this more extensive type of publication

does not conform to Squadron/Signal's established format, and I am still searching for a publisher who would be ready to take over its publication, which may contain more than one volume."

Charles Stafrace (SAFCH #886), 47 Emm. Attard Street, St. Venera, HMR07, Malta.

[Editor's note: It pains me to have to air difficulties between two members, especially when both have contributed so much to the goals of the SAFCH. However, I believe it is important to point out what we have here is a classic case of "misplaced expectations". To offer books on exotic subjects at a reasonable price, Squadron/Signal must provide well-illustrated books that are not too "deep". Mr. Stafrace did this very well; his book is "sexy" enough to attract the casual buyer, but still informative enough to please the hard-core small-air-forces enthusiast, and at a price that will turn neither of them off. Mr. Hellstrom reviewed the book from another, equally valid, perspective; did it provide the depth to contribute significantly to the historical record? Of course not, nor could it be expected to. I think we will find the books Mr. Stafrace are working on now will come much closer to meeting this latter expectation. It will also be much harder to find a publisher and the books will be much more expensive. I hope that everyone involved in this controversy will take the criticisms constructively, that they will become good friends, and that they will continue to work to promote interest in the aircraft and history of the smaller air forces of the world.]

## News from Poland

As was expected when we saw the 1/72-scale kit of the PWS-16bis, the PWS-26 has now appeared. It is in an attractive box showing a khaki machine flying over a German tank column somewhere in Poland during those memorable September 1939 days. Since this is basically the same kit as the PWS-16bis, I will restrict my comments to the differences. The overall dimensions, i.e. span and length are spot on and the shape is correct. The main differences are undercarriage legs which are in two part instead of the tripod type of the PWS-16bis; these are only new parts on the sprues. This is not quite correct as there were more differences: another type of wheel, back part of cowling shape, lack of a bulge under the second cockpit. Also purists will, no doubt, want to correct the shape of both cockpit opening, cowling, etc., while things like struts, propeller, engine, wheels are better discarded and replaced by Contrail, Aeroclub, etc. items. Decals are provided for three machines, two overall khaki and one overall silver. All three are from the Deblin Central Flying School. At least one with underwing codes 260R was used during the opening days of WWII. The other khaki a/c, 31R, and silver 61R carry the Deblin badge on a light blue rudder. It should be mentioned here that one of the best sources of information on the PWS-26 is SAFO #52, Vol.13, no.4, October 1989, with a cover photo and drawing for silver 61R, serialised 8120 and a photo of 260R, serial unknown. Other recommended references are TBU #134, Plany Modelarskie 67 (six A1 format of 1/10 scale plans and details!). I can't wait until the Krakow Museum's PWS-26 (the only surviving PWS-26), to come back after restoration which is just about finished.

The second kit has been on everybody's wish list for some time. A 1/72-scale Breguet XIX is now available from HitKit. The kit consists of over 50 injection-molded parts. The small parts, such as venturi nozzle and Lewis machine guns and ring are better thrown away and replaced by Aeroclub items. Includes a photoetched fret with some 12 or 13 part including instrument panel and acetate faces for the instrument panel. Decals are provided for 7 Polish aircraft. The instruction sheet, however, shows 11 (yes, eleven!) non-Polish machines and four different engines. These can be built by purchasing an additional plastic bag containing 6 injection parts for 3 engines and a decal sheet for a/c of the Croatian, Yugoslav, Greek, Turkish, Spanish (both Nationalist and Republican), French, and even Japanese Air Forces (see enclosed photocopy). This set, oddly enough, contains another photoetched fret with parts for wheels and pilot's seat. This is short run injection model, not cheap, and only 1000 will be produced. Generally, molding of main parts is very good including even the corrugated fuselage. My main criticism concerns the wings as they are totally flat on the bottom, while the rib effect on upper sides is overscale. All this is packed into an attractive box which promises the release of more early aircraft of Polish Air Force in Series I. I've already heard of the Ansaldo Balilla, Oeffag D III, Spad 51 and 61. Let's hope it's true!

New publications include: (1) Wydawnictwo Militaria has published another "In Action" type book: No.6 on PWS-33 Wyzel prototype. It is amazing that the author, Mr. Andrzej Glass found so much material on an aircraft built only in two prototypes. The book contains approximately 30

photographs, a cutaway drawing, two pages of 1/48-scale drawings, cockpit details, undercarriage, engine, wing details, and sketches, excellent cover art by Jaroslaw Wrobel and two pages of color art plus Polish text are all packed into 24 pages. The postponed no.3, on the P2L-38 Wilk prototype will soon be released. Altogether Wydawnictwo Militaria has released seven books in this series: #1 Lublin R-X111, #2 PZL P-24I (already reviewed for SAFO), #3 PZL-38 Wilk (to be released soon), #4 Henschel Hs-123, #5 Fokker D-XXI, #6 PWS-38 Wyzel, #7 FW-200 Condor. Worth having all of these in your "In Action" collection.

(2) AEROPLAN 1/96 brings more material on Croatian current Air Force (MiG-21s), an article on Polish Brandenburg C.I with 1/72-scale drawings, IL-20 in Poland, a long article on the XF-85 Goblin, part one on Color and Camouflage in the PAF 1930-1939 with color art work, and an article with plenty of photographs of the Mil Mi-4 for the modeler including interior details and color schemes. Something really for SAFCH members.

(3) AJ Press has just published their 3rd book in the Campaign Series titled Korea 1950-53. Of interest to SAFO readers will be, of course, the Communist side rather than USAF, FAA, etc. This book contains 66 pages, including covers, all glossy, high standard paper, over 100 photographs, 10 pages of color profiles, 5 pages of maps and tables (units, scores, aces, etc.) Of special interest are the color schemes for colorful MiGs of Korean and Soviet aces.

Wojciech Butrycz (SAFCH #981), ul. Aleksandry 25 m. 167, 30 837 Krakow, Poland.



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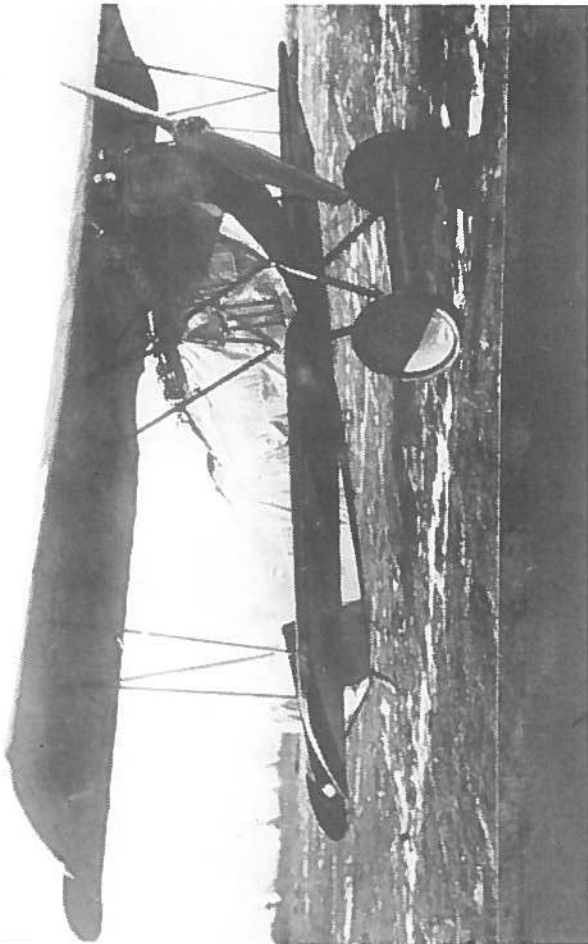


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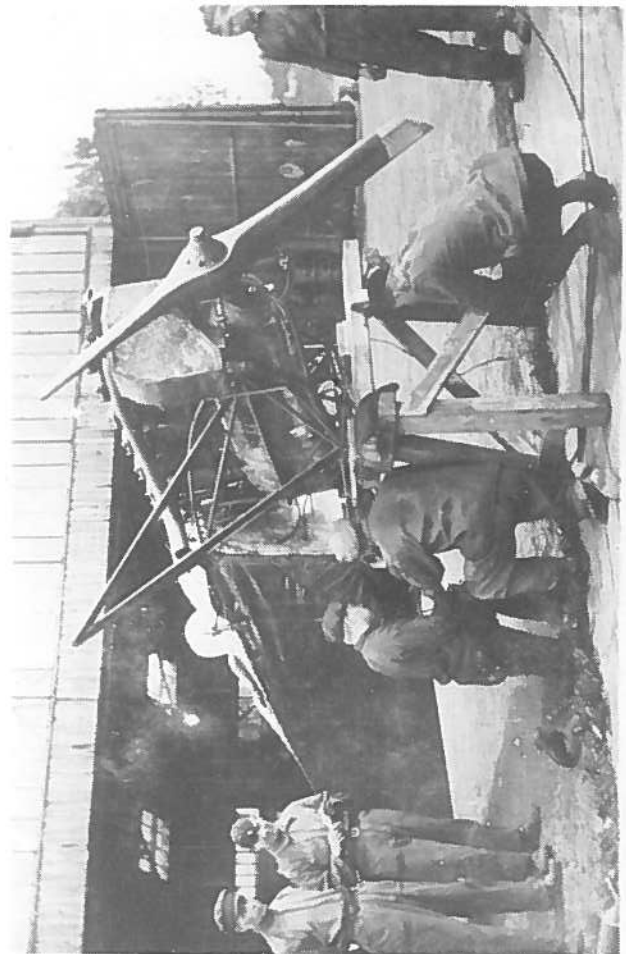




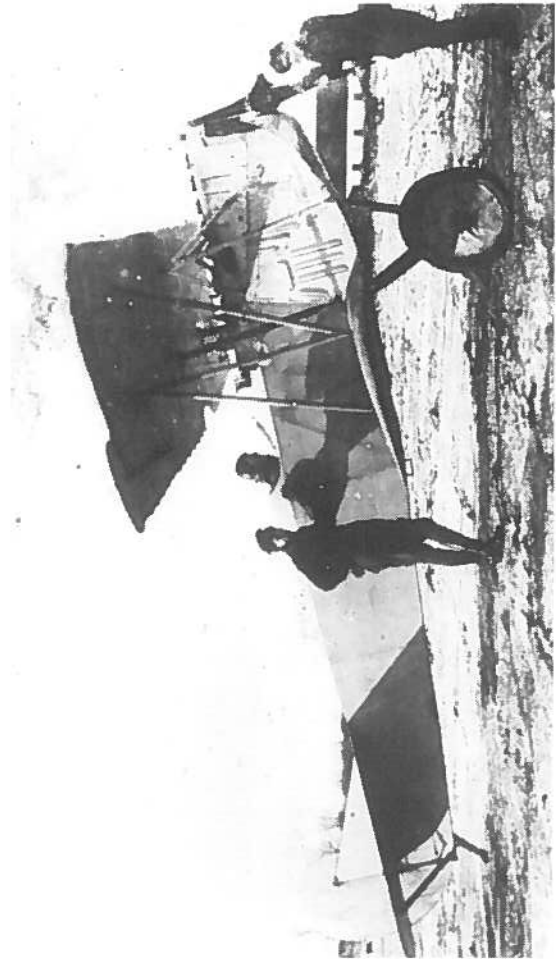
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